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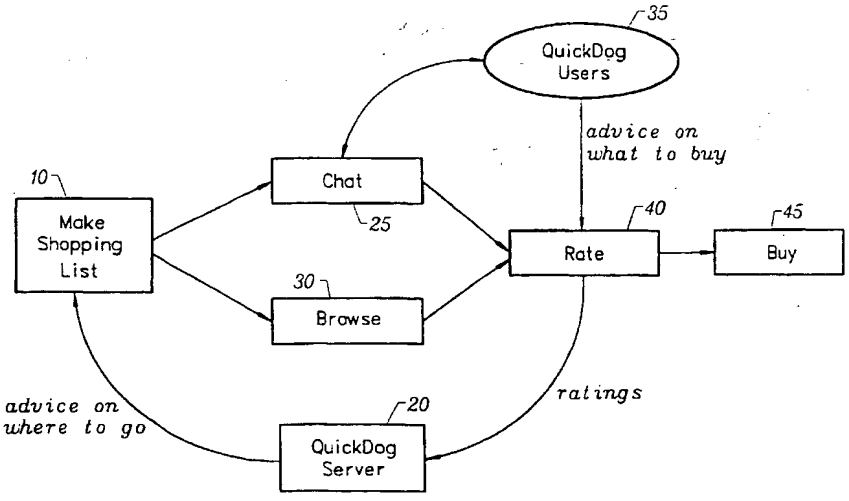
(54) Title: METHOD AND APPARATUS FOR COMPARING, RANKING AND SELECTING DATA ITEMS INCLUDING WEB PAGES



(57) Abstract: A system that maintains a database of web sites and their subordinate web pages that are offering to sell products and services. The system includes a facility to search the database by specific products, by product categories and by web sites. Utility functions provided by the system include a means to rate the products according to the web site and the product category. The system collects information about its users to create user profiles for a plurality of users. The user profiles are used to correlate different users during real-time chat requests in support of collaborative shopping and web browsing. A book-marking facility enables users to browse web pages and then set referenced to those pages. The references, or book marks include user entered categorization and subjective rating information.

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For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

Method and Apparatus for Comparing, Ranking and Selecting Data Items Including Web Pages

BACKGROUND OF THE INVENTION

TECHNICAL FIELD

This invention pertains to the rating, categorization and selection of data items such as databases, web pages, and data structures.

DESCRIPTION OF THE PRIOR ART

In the early years, the Internet was the promise of limitless information. The Internet was envisioned as a pool of knowledge that all could reference and benefit from. The limitless information that the Internet offers, though, can only be exploited if the information can be readily ascertained and assimilated. To achieve this end, proponents of the Internet realized early on that the best way to present information was in a graphical form. Hence, from this ideal, a graphical subset of the Internet began to emerge. That graphical subset is known as the World Wide Web (WWW). Information that was once so difficult to assimilate is now structured into graphical user interfaces (GUIs), known as web pages, that organize and present the information in a manner that is easy to comprehend. Navigating the WWW requires a specialized software tool called a browser. The browser can retrieve web pages from remote computers connected to the Internet and then present them in their intended graphic form to a computer user. The act of viewing web pages in their graphic form, especially in succession, has come to be known as browsing.

The Internet's graphical subset has continued to grow over the years. Today, and with every passing day, more and more organizations, governments and their agencies, and businesses around the globe are presenting web pages over the Internet. The number of web pages available through the W W W now exceeds two billion and is growing rapidly. Just a few short years ago, a computer user could easily be frustrated by the lack of information available in graphic form. Now, the frustration due to information overload on the W W W is rampant.

Search engines have been developed to help computer users find the information they need. These search engines maintain catalogs of web pages available on the WWW. These search engines accept keywords, or other search criteria, and return a list of web page references stored in the catalog that satisfy the search criteria. A computer user can then browse these web pages in an effort to find the information that is sought.

The search for information would be trivial if only a limited set of web pages contained the required content. The problem is that many of the web pages available on the WWW provide analogous content. These web pages, even though the may contain the required information, may not have the most accurate rendition of the information. And even if the information is accurate, not all of these web pages may present the information in a comprehensible fashion. This means that a computer user may need to browse, in many cases, dozens or more web pages before finding useful and meaningful information.

As a computer user begins to browse the web sites identified by a search engine, it becomes apparent that the content of many web pages is identical, or at least substantially similar. Through the browsing process, a computer user will undoubtedly develop preferences for how the information being sought is presented on a web page. The computer user may also consider the quality or accuracy of the information that a web site presents. Over time, as computer users return to the WWW as a reference source, they may find that they appreciate the presentation quality and the accuracy of the information presented by one or more web site. Of course, every computer user throughout the world will have a slightly different opinion as to the presentation quality and data accuracy for any given web page.

When the computer user returns to the search engine later in time, subsequent searches for the same information will again return a list of web pages. Unfortunately, the search engine will not consider any subjective opinions or objective evaluations of these web pages that the computer user formed during previous browsing sessions. In order to improve the efficacy of a later browsing session, the computer user will need to rely on memory, or other mechanisms, to filter out the *undesirable* web pages. Honing in on

the best web site, i.e. the one that presents the most accurate and desirable information in the most comprehensible manner, becomes the objective.

As the quantity of information available on the World Wide Web continues to grow, the task of effectively tracking the contents and the quality of web pages becomes an ever-increasing challenge. Manual methods may be suitable for tracking good web pages, but the staggering quantity of available web pages can cause computer users to loose track of the particular web pages that they prefer. What is required, then, is a means to track web pages and to record not only the web address that references the web page but also note quality attributes such as the quality of presentation and informational accuracy.

This need transcends all domains of interest. It really doesn't matter if the computer user is looking for information on today's weather, the most recent stock-market quotes, or product information. Today, on all of these fronts, the number of available web pages is staggering.

One facet of the WWW that has become a significant contributor to the number of available web pages is electronic commerce. Electronic commerce has become extremely prolific. With that said, it is easy to visualize the vast number of web pages presenting analogous content in the realm of electronic commerce alone. This number is proportional to the number of merchants and vendors operating web sites and to the number of goods and services that they are offering for sale.

Traditional search engines may identify web pages that offer the same or similar products. Computer users that are out on an electronic shopping excursion will find hundreds of web pages for any given product; video cameras, shoes, umbrellas, spices, vitamins and automobile tires just to name a few. But not all of the web pages, catalogued by a search engine, will necessarily offer these products for sale. Some web pages may only present product descriptions or consumer reviews.

To really complicate the matter, web pages that offer particular products are normally presented by a smaller set of on-line merchants. Every electronic merchant, then, will publish a plurality of web pages. The suite of web pages that one merchant publishes over the Internet is referred to as a site. The

web site can be viewed as an electronic store. The electronic store can then offer a wide variety of products. Tracking the quality of web pages is somewhat dependant on the quality of the web site they belong to. The tradional search engine does not event categorize web page by product, let alone correlate what web pages pertain to a given web site.

Consider the scenario where a consumer wants to buy a pair of hiking boots using the World Wide Web. In this context, the term "consumer" is meant to be a computer user browsing web pages over the Internet. The most probable sequence the consumer will follow would be to employ a generic search engine and then look for web pages that contain the words "hiking boots". The generic search engine will retrieve a listing of web pages that have the words "hiking boots" included in their content. The consumer must then manually sift through an extensive list of web pages.

The consumer will first need to identify which web pages are offering to sell hiking boots. To do this, the consumer will then need to browse all of the web pages that the search engine identified. The consumer will then need to track the various web pages that are actually offering to sell hiking boots and then make notations regarding such attributes as the brand of the hiking boots and at what price the web page is offering to sell the boots. After browsing several, if not dozens of web pages, the consumer will need to return to the web page that offers the best hiking boot at the best price before actually buying the product.

What the consumer, or computer user, is doing throughout this process is, in effect, ranking some finite quantity of web pages that are of interest. In this example, the web pages that are of interest are those that are offering to sell hiking boots. The process of ranking web pages is rather cumbersome, relying on a paper and pencil method to record the addresses of web pages and then note significant attributes. In this example, significant attributes may include the brand and the price of the hiking boots. After evaluating the web pages, the computer user will establish an overall relative rank for each web page based on the significant attributes. The consumer will then return to the web page that is perceived as being "#1" in the relative scale.

But this may not be the end of the process. Again, tracking the quality of the web pages that are offering hiking boots does not give any indication as to

the quality and reputation of the on-line merchants presenting the pages. The e-commerce merchant's reputation can be correlated to the web site the web page is connected to. More important than just the merchant's general reputation is the merchant's specific reputation as a hiking boot supplier.

Along side the sophisticated computer of the present day, the sophisticated computer of the present day connected to the information super highway called the Internet, the ranking method relies on a piece of paper with handwritten notes.

The computer user could actually use some of the features inherent in the web browser used to view web pages. First, the computer user could record web page addresses using the browser's book-marking facility. The book-marking capability alone does nothing to help the computer user record significant attributes for a web page or to record subjective ranking of the web pages. Again, the computer user would need to manually track the actual content of these web pages so that an intelligent selection can be made and the product ultimately purchased. A final drawback to this method is that, after the computer user has finished with his e-commerce activity, the bookmarks remain in the browser. Most, if not all of these bookmarks are no longer of any interest to the computer user. They must be manually deleted in order to preclude the accumulation of stale bookmarks.

Electronic commerce is also handicapped by the fact that the computer user seeking to purchase products or services is normally found isolated from other potential consumers. In the traditional setting, such as that of a department store, shoppers browse the aisles and compare the quality of similar products that the merchant is offering. As shoppers browse the aisles, they might actually chat with other shopper's in the store. This interaction can help the consumer evaluate the quality of the products available in the store. Fellow shopper's can directly exchange their subjective opinions regarding these products, and can discuss the finer attributes of each product as it may relate to their particular needs or previous experiences. This concept has long been the norm in traditional shopping venues.

It's easy to imagine going out and looking for a circular saw. You might wander into a department store or perhaps the local hardware store and then browse through the power tools section. A cursory inspection of the

available circular saws would lead the typical consumer to make some form of an initial decision as to what circular saw to purchase. If, by chance, the shopper were to encounter another shopper, they may exchange their opinions regarding the quality and performance of the various circular saws that that particular merchant has displayed there. The two shopper's could, in essence, compare notes with regard to the power and precision various circular saws exhibit. All of a sudden, the initial product selection can be further refined by the opinion of the second shopper.

The Internet provides shoppers with the ability to virtually browse through a whole gamut of department stores and immediately compare the prices that those stores are offering to sell similar or identical products. By adding an intelligent search and tracking mechanism, consumers could quickly identify the quality of web pages. By organizing web page references according to web site, consumers could easily locate the electronic commerce merchants that are offering the same or similar products on the Internet. All of these web pages can then be sorted by price, by merchant, or by other non-price factors.

To more closely resemble a traditional shopping venue, what is also needed is a facility that allows consumers on the Internet to solicit opinions from and discuss product offerings with other consumers that are on-line. What makes this a complicated proposition is that shoppers in a stores can evaluate the personal preferences of other shoppers in the store using a wide variety of subjective observations of each other. Referring back to the circular saw example, a shopper looking for a circular saw would be more likely to ask advice from someone browsing in the hardware section of the store rather that in the furniture department. In the prior art, the only method of connecting shoppers for such dialog was by topic oriented chat rooms. This is simply not practical in the electronic commerce context.

SUMMARY OF THE INVENTION

The methods and apparatus described herein implement a novel and unique facility that provides for cross-web-site shopping and for the tracking of the quality and accuracy of products. web pages and web sites. The present

invention is a method and an apparatus that provides for tracking web pages and establishing relative rankings of those web pages. Pages are organized according to a product category and according to a web site affiliated with a merchant. This capability is augmented with an intelligent book-marking facility that enables computer users to book-mark web pages together with rating and categorization information. The present invention provides facilities for communicating between on-line shoppers that have similar personal attributes and preferences. The present invention creates user profiles that can be used to correlate various users that may desire to communicate regarding web sites. This invention includes a facility to communicate these user profiles to an on-line merchant so web pages can be tailored to meet the specific individual preferences of a plurality of users.

BRIEF DESCRIPTION OF THE DRAWINGS

Fig. 1 is a block diagram that depicts a new shopping paradigm as it applies to one embodiment of the present invention;

Fig. 2 is a block diagram that shows how the client and server components in the present invention are interconnected using a computer network;

Fig. 3 is a data flow diagram that illustrates the various data flows and processes that operate cooperatively to enable cross-site shopping;

Fig. 4 is a pictorial diagram that illustrates the sequence of events that are undertaken to help a computer user create a shopping list according to the new shopping paradigm;

Fig. 5 is a pictorial representation of the graphical user interface that is presented to the computer user by the list module;

Fig. 6 is a pictorial representation of the graphical user interface that is presented to the computer user by the list module after the computer user has selected a plurality of example product categories;

Fig. 7 is a pictorial representation of the graphical user interface that is presented to the computer user by the list module when the computer user wants to view products available by web site;

Fig. 8 is a pictorial representation of the graphical user interface that is presented to the computer user by the list module when the computer user wants to view products available by product category;

Fig. 9 is a pictorial depiction of an alternative use of the comparison window under the SHOPPING CART tab;

Fig. 10 is a pictorial diagram that illustrates the interaction between the browser companion and the browser necessary to recall web pages hosted on a merchant's server;

Fig. 11 is a pictorial view of the shopping cart GUI after a collection of products have been added to the shopping cart;

Fig. 12 is a pictorial view of a web page GUI that is customized by the merchant server in response to a composite web address;

Fig. 13 is a pictorial representation of the process of filling out an order form supplied as a web page by a merchant server;

Fig. 14 is a pictorial view of an exemplary order entry form returned by a merchant server;

Fig. 15A is a pictorial view that depicts the configuration of the rating GUI used in cross-site rating;

Fig. 15B is a pictorial representation of the intelligent book-marking GUI;

Fig. 16 is a pictorial representation of the bookmark navigator GUI;

Fig. 17 is a block diagram that pictorially depicts the establishment of instant messaging based communication amongst collaborative computer users;

Fig. 18 is a pictorial representation of the collaborative shopping GUI; and

Fig. 19 is a table that represents the structure of the product/brand rating database.

DETAILED DESCRIPTION OF THE INVENTION

The proliferation of web pages on the WWW has created the need to track the quality of web pages that a computer user encounters during a browsing session effectively. Throughout the browsing session, the computer user may need to perform several functions that collectively aid in establishing a rating for web pages that can be used at a later time. A brief synopsis of each of these facilities will help to place the overall invention into one major context, that being electronic commerce. This one context, however, is not meant to limit the scope of the present invention. Electronic commerce is simply exemplary of the many applications the current invention will satisfy.

Cross-Site Comparative Rating

The cross-site comparative rating facility enables a computer user to search an established data base of items based on a user specified search criteria. In the electronic commerce application described here, the computer user enters a search string into a data entry field. The system will respond to the search by providing the computer user with a list of items that satisfy the search. In the electronic commerce context, the user can enter a search string that describes a particular product or product category. The system will then return a list of web pages that are offering that product for sale.

Distinguishing this facility from the prior art, a typical search engine will return a list of references to any and all web pages that match a given search criteria. The present invention returns references to only those web pages that are actually offering to sell a particular product. Where the prior art simply presented a list of web pages, the present invention augments the list of references with comparative ratings for the web pages. The prior art did not organized web pages in any particular manner. The present invention organizes the results of a search according to product category and/or by web sites where a web site is itself an organized collection of web pages.

Intelligent Book-Marking

The intelligent book-marking facility provides a function similar to the cross- site comparative rating. Intelligent book-marking allows the computer user to rate individual single web pages during a normal browsing session. Distinguishing this facility from the prior art, the intelligent book-marking facility captures not only the web address of a web page, but it also stores a rating and a category for the web page. When the computer user needs to recall the book-marked web page, the bookmarks are organized by category and presented to the user with the previously stored rating value.

Customized Web Page Request

The present invention appends user profile information to the end of a URL address for a given web page. This facility enables merchants to tailor a web page to meet specific preferences as defined in the profile that describes the computer user. When a computer user selects a web page from the list of web pages that match a given search criteria, the system will forward information about the computer user to the server that is hosting the requested web page.

Collaborative Shopping

The collaborative shopping facility enables concurrent users of the system to communicate regarding the items selected. The collaborative shopping facility relies on user profiles in order to match users that have similar profiles. In the context of electronic commerce, the collaborative shopping facility will automatically seek out all known users that correlate with the demographics of a given user. The matching facility will identify those users that have similar shopping histories, purchasing histories, income levels, gender and the like. This list of user attributes is by no means exhaustive and includes other attributes that are not described here. Once those users have been identified, the first user can either engage in real-time chat or send a communiqué to other like users via e-mail. The users can also track each others browsing session. An electronic merchant can maintain a sales person on-line so that the merchant can participate in the collaborative shopping session as an advisor.

User Profiling

The basic foundation that supports customization of web pages and collaborative shopping is the creation and maintenance of user profiles. User

profiles include information that can identify the computer user and more generic demographic information. The present invention maintains sensitive information about the computer user on the computer users own personal computer. This information is used only for shopper-merchant transactional purposes. The demographic data about a computer user is developed from the more sensitive, personally identifiable data stored on the user's computer. The demographic data, though, is developed in a fashion that precludes identification of the user. The demographic data is used to customize web pages and is also shared through a global database used to correlate computer users engaging in collaborative shopping.

Shopping Paradigm

The current embodiment of the system has a United States Trademark name "QuickDog". The QuickDog system defines a paradigm for electronic commerce that provides for cross-site shopping coupled with multi-user communications. The other facilities described herein are also embodied in the QuickDog system.

Fig. 1 depicts the shopping paradigm as it applies to the QuickDog embodiment of the present invention. The first element of the shopping paradigm involves making a shopping list 10. While involved in this element of the paradigm, the user is defining search criteria essential to subsequent elements of the paradigm. The QuickDog, or cross-site comparison server 20 is consulted for a listing of web pages that comply with the search criteria. The cross-site comparison server 20 provides a list of web pages that are offering to sell a particular product specified by the computer user. Note that the database integral to the cross-site comparison server includes only web sites and their subordinate web pages that are actually offering to sell a particular product or service.

After the computer user has been presented with a list of web pages, the computer user can enter either one or both of two other paradigm elements. These elements are: the chat function 25; and the browse function 30. The shopping paradigm's chat function relies on the QuickDog user profile database 35. The user profile database 35 provides a means to correlate interest factors among all of the users. This process results in a list of other users that are most like the first user based on their profiles. If users choose

to do so, they can enter into the browsing function 30 of the shopping paradigm. In the browsing function, the user is provided with the ability to view the web pages that are of most interest.

Once the user has either communicated with other users or has viewed a particular web page, the user can then rate the web page and the product it is offering. This is referred to as the rating element 40 of the shopping paradigm. Aggregate ratings for products reflecting an average opinion of all system users can be obtained from a product database integral to the cross-site comparison server 20. Advice from other users, solicited in the chat element of the paradigm, can be used in conjunction with the aggregate ratings to form a personal rating. The personal rating for a product is stored on the computer user's personal computer and is also incorporated into the aggregate rating maintained by the cross-site comparison server 20. The shopping paradigm concludes with an opportunity to actually buy a particular product. This is called the buy element 45 of the shopping paradigm.

Client-Server Architecture

The system embodied here is comprised of computer hardware and software components interacting in a client-server architecture. The hardware elements necessary at the client side are typically comprised of a computer with a facility to interface to a computer network. In the present commercial embodiment, called the QuickDog system, the computer at the client side is normally a personal computer with a display screen and some means to connect to the Internet. The server is nominally comprised of a suite of high-speed computers with sufficient disk storage capacity to store both a product/brand database and a user profile database.

Fig. 2 is a diagram that shows how the client and server components in the system are interconnected using a computer network. The cross-site comparison server 65 is normally located remotely from any and all given users of the system. The client elements of the system are a web browser 60 and a browser companion 55. In one alternative embodiment, the browser companion can be replaced with a plug-in utility for the browser. Both the browser companion 55 and the alternative plug-in perform analogous functions differing only in the communication mechanism employed to communicate with the browser 60.

Fig. 2 shows that the cross-site comparison server 65 is interfaced to a computer network 50. This can be any generic network, but in the electronic commerce context this network is the Internet. The browser companion 55 establishes a communication channel with the browser 60. Both the browser 60 and the browser companion 55 establish independent communication channels with the cross-site comparison server 65 and with each other. Once a computer user is ready to purchase merchandise over the Internet, the browser 60 is used to interact with the appropriate merchant server 250. The browser 60 is used to view web pages describing products or services and then to actually place the order.

Fig. 3 presents the various data flows and processes that operate cooperatively to enable cross-site shopping. Although not apparent in Fig. 3, the browser companion 55 is the point of entry for cross-site shopping. When the computer user desires to use the cross-site shopping services offered by the present invention, the user must call up the browser companion 55 while the browser 60 is active.

CROSS-SITE SHOPPING

Creating a Shopping List

Fig. 4 demonstrates the sequence of events that are undertaken to help a computer user create a shopping list according to the new shopping paradigm. Once the browser companion 55 is started, it invokes a software module called "list" 70. The list module 70 interacts with the computer user 75 so as to facilitate the creation of a list of products that the computer user may want to buy. The physical user screen 80 that the computer user 75 actually sees has two separate windows; the normal browser 60 and the browser companion 55.

After the computer user has created a list of products, or product categories, the browser companion 55 sends the shopping list, augmented with user profile data, (Ref. No. 62) to the cross-site comparison server 65. The cross-site comparison server 65 responds to the browser companion 55 with a list of web page references 64 that are called uniform resource locator (URLs).

Fig. 3 illustrates the detailed mechanics of this process. The browser companion 55 starts the list module 70. The list module 70 forms a query that is based on the computer user's shopping list and The list module 70 then consults a local product database 330 for web page references conforming to the user's query. The list module returns the web addresses to the buy module 320. The list module 70 then creates a cross-site session 200 on the cross-site comparison server 65. The list module 70 interacts with the cross-site session 70 over the Internet. The cross-site session then obtains additional web address from the global products/brands database 210 and returns it to the list module 70. The selection of web addresses from the global products/brands database 210 is made based on the computer user's demographics and the product query. The list module 70 will then return these additional web addresses to the buy module and will also save the web address in the local product/brand database 330 as a local cache.

The browser companion 55 creates a query to retrieve the computer user 75 profile data. This query is submitted to a rating module 310. The rating module is a software element that will be described later. For the purposes of the immediate discussion, it is sufficient to indicate that the rating module 310 manages the local user profile database 300. In response to the query received from the browser companion 55, the rating module 310 retrieves the user profile information from the local user profile database 300 and returns it to the browser companion 55.

Fig. 5 depicts the graphical user interface (GUI) that is presented to the computer user by the list module 70. This GUI is called the list maker GUI 82 and includes a shopping list window 80. The shopping list window 80 provides an essentially real-time enumeration of the types of products that the computer user 75 may want to purchase in a comparative browsing session. The computer user 75 can add items to the shopping list displayed in shopping list window 80 by selecting a category from the category window 95 and then using the ADD command button 90. The computer user 75 can extend the viewable area for both the shopping list window 80 and the product category window 95 by using the scroll buttons 100 and slider integral to each of these windows.

The computer user 75 can search for a particular product name, perhaps by brand or function, by typing a search string into the product-name data entry

field 120 of the graphical interface. If the computer user 75 wants to directly add a product category to the shopping list window 80, then the computer user 75 can enter a search string into the Category QuickFind data entry field 125 of the graphical interface. Both of these methods will return a list of standard product categories that the cross-site comparison server 65 has on file and allows the computer user 75 to select one of the standard product categories and add it to the list using the ADD command button 90.

Fig. 6 shows the list maker GUI 82 after the computer user 75 has selected a few product categories that the computer user wants to comparison-shop. In this example, the computer user 75 has so far indicated that sunglasses, shorts, shirts and tops, climbing equipment, VCRs and Stereos are on the shopping list. The computer user 75 can delete items from this list by using the EDIT LIST command button 85. It should be noted that the list of product categories presented in the figure is only illustrative of possible choices. The product database in the current system has over four million products organized into a plurality categories.

Using the product category window 95, the computer user 75 can add additional items to the shopping list shown in the shopping list window 80. The product category window of this graphical interface provides a hierarchical categorization of product types. By scrolling through the product category window 95, the user can select a broad category indicated by a right arrow block 105 (_). By selecting the right arrow block attached to a broad category, the list module 70 expands the broad category by first changing the right arrow block to a down arrow block 110 (_) and then presenting subordinate categories with an indentation 115. Note that subordinate product categories can in fact have other expandable categories nested within them.

Fig. 6 also shows that the list maker GUI 82 has three subordinate screens that are accessible using a tab mechanism. The user can select one of three tabs. The first is the EDIT SHOPPING LIST tab 120. The second tab is the COMPARE/BUY tab 125. The third and final tab is the SHOPPING CART tab 130.

The computer user 75 selects the EDIT SHOPPING LIST tab 120 to prepare a shopping list of items that will be purchased. After the computer

user 75 has finished creating the shopping list, the COMPARE/BUY tab 125 is selected. When the COMPARE/BUY tab 125 is selected by the computer user 75, then the browser companion 55 sends a query to the cross-site comparison server 65. This query request web page addresses and ratings organized by site and product category.

Fig. 4 further shows the purpose of the query initiated by the browser companion 55. Once the computer user 75 has completed a shopping list, the browser companion 55 sends a list of the products in the shopping list together with profile demographic data that describes the computer user 75. The cross-site comparison server 65 uses the product categories and the profile data that describes the computer user 75 to select a plurality of web sites available on the WWW that actually are offering products for sale that are commensurate with the selected product categories.

Fig. 3 provides additional detail as to how the cross-site comparison server 65 retrieves data in response to queries from the browser companion 55. The browser companion 55 initiates the list maker module 70. Once the list maker module 70 is ready to query the cross-site comparison server 65, it sends a list of items that the computer user may want to buy. This transaction begins a user session 200. The user session 200 consults a product/brand database 210. The product brand database is keyed on the various product categories that the computer user 75 can select from. This is quite analogous to shopping in a brick-n-mortar department store. In the traditional retail store, a shopper can hone in on product categories by aisle. The product/brand database 210 contains a plurality of entries for different discrete products under each category. Each entry in the product/brand database 210 includes a web site address and other attributes such as price and ratings for the site and for the product.

Compare and Buy Products

Fig. 7 shows the GUI that is subordinate to the make list GUI 82 and that is presented to the computer user 75 after the COMPARE/BUY tab 125 is selected. An enumeration of either web sites that are offering to sell a particular type of item or a list of items is presented in a comparison window 135. The comparison window 135 has scroll bars 140 and scroll buttons 145 that allow the computer user to expand the field of view for that window.

The browser companion 55 uses the selection of the item/sites radio control 150 of this GUI to determine if the computer user 75 wants to explore by item or by web site. If the computer user wants to explore by items, then the computer user 75 must select the ITEMS radio button in the ITEMS/SITES radio control 150. If the computer user wants to explore by web sites, then the computer user 75 must select the SITES radio button in the ITEMS/SITES radio control 150.

The item/site drop-down list 130 of this GUI is a selection list of items or web sites, depending on the state of the ITEMS/SITES radio control 150. When the computer user 75 has selected the ITEMS radio button in the ITEMS/SITES radio control 150, the drop down list is populated with the items found in the shopping list formed by the computer user 75 when the EDIT SHOPPING LIST tab 120 is selected. When the computer user 75 has selected the SITES radio button in the ITEMS/SITES radio control 150, the drop down list is populated with a list of web sites that are offering the types of items identified in the shopping list formed by the computer user 75.

This GUI presents the computer user 75 with either an enumeration of items that can be purchased or the web sites that are offering items for sale. The computer user 75 can also select what type of attribute data is presented in the comparison window 135. In the current embodiment, the user can select one of three attributes; the price of the product; the computer user's personal rating; or an aggregate rating for the item which is a statistical representation of a plurality of computer users that have previously rated the item. In the current embodiment, this selection is made by means of selecting one of three radio buttons in an ATTRIBUTE radio button control 160.

Fig. 7 presents an example of a list of web sites that offer a particular item. In this example, the computer user 75 has selected the SITES radio button in the ITEMS/SITES radio control 150. The comparison window presents an enumeration of all web sites that, as in this example, are offering video cassette recorders (VCRs). Note that the cross-site comparison server 65 has returned a list of a plurality of web sites that are offering VCRs. Each site is listed together with a specific VCR type by brand and model. The computer user has also opted to view the price of each product offered by the various web sites by selecting the PRICE radio button from the ATTRIBUTE radio button control 160. Had the computer user 75 selected

YOUR RATING or AGGREGATE RATING from the ATTRIBUTE radio button control 160, the price column in the comparison window 135 would have been replaced with either the computer users' personal rating or a statistical representative sample of all computer users that have previously rated the item or web site, respectively.

Fig. 8 presents an example of a list of items offered by a particular web site. In this example, the computer user 75 has selected the SITES radio control in the ITEMS/SITES radio control 150. The contents of the comparison window 135 presents all of the products in the product categories selected by the computer user 75 that are offered by the crutchfield web site. Note that the crutchfield web site has been selected by the computer user 75 using the item/site list element 130 of the make list GUI 82.

Hence, using this one comparison window 135, the computer user can view all of the products available for purchase on the WWW. The computer user can instruct the system to present the product by category (item type) or by web sites that are offering products of that type. The computer user can then review the ratings for each product. When the computer user 75 dictates that the comparison list should be sorted by web site, then the rating field, either the computer users' personal rating or the aggregate rating, represents the rating for the web site. When the computer user 75 dictates that the comparison list should be sorted by product, then the rating field, either the computer users' personal rating or the aggregate rating, represents the rating for the product.

Adding Products to Shopping Cart

Fig. 8 shows that the make list GUI 82 includes an ADD-TO-CART command button. This is a cross-site cart in which the computer user can place products from multiple sites. Once the computer user 75 decides on what product to purchase, as illustrated by selection of a Sony (reference no. 220), the computer user can add that product to a cross-site shopping cart by actuating the ADD-TO-CART command button.152. Also, when a given item is selected in this manner, additional details regarding the product, including perhaps additional descriptions, warranty provisions and special pricing, are presented to the computer user in the detail window154. The detail window 154 is immediately adjacent to the comparison window on the COMPARE/BUY GUI subordinate to the make list GUI 82.

Fig. 9 depicts the alternative use of the comparison window 135 when the computer user selects the SHOPPING CART tab 130. When the computer user selects the SHOPPING CART tab 130, the comparison windows 135 presents an enumeration of the products that the computer user 75 has added to a shopping cart. The contents of the shopping cart can then be purchased from the merchant by either actuating the GO-TO-PAGE command button 230 or the FILL-FORM command button 240.

When the computer user 75 actuates the GO-TO-PAGE command button 230, then the system will interact with the browser 60 to call up the web page from a merchant server accessible over the Internet. When the computer user 75 actuates the FILL-FORM command button 240, the system automatically calls up the order form web page that is hosted on the merchants server and passes the computer users identification data to the server. Both of these mechanisms are described fully below.

Browsing a Merchant Product Page

Fig. 10 is a pictorial diagram that illustrates the interaction between the browser companion 55, the browser 60 and the merchant server that occurs when the computer user 75 wants to view the web page that presents a particular product and is hosted on the merchants server.

The browser companion 55 would be in a state where the computer user 75 is being presented the list maker GUI 82. This GUI has three tabs that can be used by the computer user 75 to call up one of three subordinate GUIs. When the computer user selects either the EDIT-SHOPPPING-LIST tab 120 or the SHOPPING-CART tab 130, the GUIs subordinate to the list maker GUI 82 include a GO-TO-PAGE command button 230 (Fig. 9).

Fig. 8 illustrates the scenario where the computer user selects a particular product that has been added to the shopping cart. Note that in this view, the products presented are for illustration purposes only and that the current embodiment of the present invention includes a plurality of products in the product/brand database 210. In the illustrative view presented in Fig. 8, the computer user 75 has selected a product called a long-sleeve plaid heavyweight oxford shirt.

In response to the computer users 75 actuation of the GO-TO-PAGE command button 230, the browser companion 55 will use the web address for the product web page that has been selected by the computer user 75 as the basis of a composite web address. The selected product is highlighted in some fashion, such as inverse text (Fig. 11, Ref. 260), to provide the computer user some lexical feedback that the product has been selected prior to retrieving the web page. After the browser companion 55 has identified the web address, then the browser companion 55 will retrieve profile data for the computer user from the user profile database 300. The profile information is descriptive of the computer users 75 preferences, buying history and the like.

The browser companion 55 concatenates the primitive web address and the user profile information to create a composite web address. The composite web address 340 is comprised of the primitive web (URL) address of the page appended with a profile tag. The browser companion 55 forwards the composite web address 340 to the browser 60. The browser 60, in turn, will forward the composite web address 340 to the merchant server 250.

Fig. 10 illustrates how one aspect of the present invention is distinguished over the prior art scheme of responding to web page requests. In the prior art, the merchant server 250 would only have the primitive web (URL) address for a product web page. Before the present invention, some merchant servers would store information about the actions a computer user may have taken while connected to the server. The data element that the merchant server would write on the user's computer is called a cookie. In that limited context, the previous art could then modify web pages on past user history, but that history was limited to the one web site. In the present invention, the cross-site comparison server 65 accumulates user behavior such as, but not limited to shopping history and user preferences that are of global scope. The user profile transcends any one site and provides information about all of the user's interactions with all web sites.

In the present invention, the user profile data is communicated to the merchant server 250 in the form of a composite web address 340. The merchant server will then use the computer user profile tag as a basis for tailoring a web page in deference to the user's preferences. This means that the merchant server can provide customized content for each electronic commerce shopper

350 regardless of weather the merchant knows of that shopper. In a refinement to the present embodiment, the substance of the user profile data composite web address can be tailored to meet specific requirements for each product web page. For instance, a particular product web page may not need for a shirt may only want to respond to a preference of color or size.

Fig. 12 depicts only one type of customization that can be achieved by the merchant server 250 in response to a composite web address 340. In this example, the user profile information that was submitted to the merchant server 250 indicated that the computer user 75 wears a regular size shirt and likes neutral colors. The merchant server can then prepare a custom web page that includes pre-selected size 360 and pre-selected color 370 attributes. This gives the web page a personal touch that the computer user will certainly appreciate and will give the merchant the ability to provide greater customer service.

Automated Order Forms

Fig. 13 is a pictorial representation of the process of filling out an order form supplied as a web page by a merchant server. When the browser companion identifies a form to fill, or the computer user actuates the FILL-FORM command button 240 as shown in Fig. 9, the system will automatically fill out a form on a web page, for example the order form supplied by a merchant server for a given product.

Fig. 13 illustrates the how a specialized object, called a wallet 380, is used to assist the computer user 75 in making a purchase. The wallet module 380 is instantiated by the browser companion 55 in response to the computer users 75 actuation of the FILL-FORM command button 240.

Fig. 3 depicts a process that the wallet module 380 uses to access information about order entry pages supplied by merchant servers. The wallet module 380 creates a query that is forwarded to the buy module 320. The purpose of this query is to retrieve a template that reflects the structure of a given order entry page. The query also requires the retrieval of the web address for a given order entry form.

To fulfill the query, the buy module 320 forwards the request to the list module 70. The list module 70 then consults a local product/brand database

330. If the information for the order entry page for the selected product page is found in the local product database 330, then the list module returns an order entry form template to the buy module 320. In the event that the order entry form template and web page address can not be found in the local product/brand database 330, then the list module 70 creates a cross-site session 200 on the cross-site comparison server. The list module 70 interacts with the cross-site session 70 over the Internet. A collection of templates, along with associated web page addresses is stored in the global product/brand database 210.

The cross-site session then obtains the appropriate template from the global products/brands database 210 and returns it to the list module 70. The list module will then return the template to the buy module 320 and will also save the template in the local product/brand database 330 as a local cache. The buy module 320 will then return the template for the order entry form and the web page address for that form to the wallet module 380.

Given that the wallet module 380 has obtained the template for a web page address for a given product, the wallet module will forward the template to the browser companion 55. The web browser 60 will then retrieve the web page from a merchant server 250 that comprises the order entry form for a product. The wallet module then uses the built-in facilities of the browser, typically including a secure socket layer, to communicate with the merchant server for purposes of completing the transaction. In the event that a template is not found, heuristics in the browser companion 55 or cross-site comparison server 65 are applied to the form to automatically fill it it using information from the user's personal profile.

Fig. 14 presents an example of an order entry form returned by the merchant server 250. The wallet module 380 will detect the complete loading of the order entry page by the browser 60. Upon the complete loading, the wallet module 380 will use the order entry template as a guide for filling in various data entry fields on the order entry form.

The wallet module is privy to private information for the computer user 75. This type of information includes the computer user's 75 full legal name, address, phone number, e-mail address, and credit-card number. Once the wallet module 380 detects that the order entry form has been fully loaded by

the browser 60, the wallet module 380 will find the data entry fields including the computer user's 75 address, phone number, e-mail address, and credit-card number on the order entry form according to the template. The computer user 75 is then left with the final step of submitting the order entry form to the merchant server 250. Note that the values entered these fields (reference numbers 400, 405, 410, 415, and 420) are for illustration purposes only. In the actual embodiment, these values will reflect the actual values for a given computer user 75. The wallet module 380 also can access detailed information about the computer user preferences. This information can be used to fill out other forms during the ordering process, such as, but not limited to, size and color preferences.

Fig. 13 further illustrates that the wallet module 380 provides a record of the purchase transaction back to the browser companion 55. The browser companion stores the transaction record into the personal profile database 300 for the computer user 75. This record becomes a part of the user profile for the computer user 75. Any confirmation code that was provided by the merchant computer 250 is also stored in the personal profile database 300. The user can retrieve the confirmation code and transaction record at a later time in the event that the merchandise ordered is not timely received.

RATING PRODUCTS AND WEB SITES

Cross-Site Rating System

A distinguishing feature of the rating system embodied in the present invention is the capability to rate products not only according to the product, but also by the web site that is offering the product and by product category. In this context, it is important to distinguish a web site from a web page. Here, a web site is comprised of a collection of web pages that are somehow affiliated. In the e-commerce context, a web site would be taken to mean the collection of web pages published by one merchant. This is analogous to a brick-n-mortar store that has many products on their shelves. A product category, such as VCRs or men's shirts as an example, would be much like a department in a department store.

Hence, the rating system enables all users of the system to score not only the product, but the quality of the web site offering the product and the quality of the product category. This provides a computer user with insight as far as

how certain merchants have performed in the past. One merchant may not be able to ship VCRs in a timely manner, while the same merchant may be a great place to buy men's shirts.

The rating system utilized in the present invention is actually two distinct rating mechanisms. The first rating mechanism is a personal rating system. The personal rating system provide a computer user with the ability to rate specific products based on the web page and/or web site that is presenting the product. The personal ratings that a computer user makes are stored on the computer user's personal computer.

The second rating mechanism collects personal ratings for products according to the web site and web page from all of the users that are registered with the cross-site comparison server. The cross-site comparison server uses all of the ratings collected from the personal computers belonging to individual users and creates an aggregate rating.

Fig. 11 depicts a collection of products that have been added to the computer user's shopping cart. The products are organized according to product category and then by web site. When the computer user actuates the RATE SITES command button 650 on this GUI and when the computer user has selected one of the products listed in the shopping cart window 660, the browser companion 55 presents a rating GUI to the computer user.

Fig. 15A depicts the configuration of the rating GUI 545. The rating GUI 545 includes a plurality of rating grades. In the example shown in Fig. 15A, the grade levels are No Stars (510), one star (515), two stars (520), three stars, (525), four stars (530) and five stars (535). The computer user can actuate any one of these command buttons. By doing so, the rating GUI 545 is closed and the rating level corresponding to the command button that was actuated is assigned to the product for that given web site and category. The resulting triplet, product; category; web-site, is then stored in a local product/brand database 330 on the computer user's own personal computer. A copy of this rating is then communicated to the cross-site comparison server 65 where it is stored in the global product/brand database 210.

If the computer user so desires and before actuating one of the rating buttons, the computer user 75 can select the comment entry command button 530.

When the computer user 75 selects the comment entry command button 530, text commentary can be typed into the comment field 531 of the rating GUI 545. These comments are only stored locally in the computer user's product/brand database 330. Before selecting a rating level, the computer user can add the product to the shopping cart by actuating the shopping cart control button 535.

Yet another unique feature of the present rating system is the capability to parse web pages during the rating process and extract product attributes therefrom. One specific attribute that is extracted from web pages during this parsing process is the brand name and model of the product. This information is then included in the rating tables integral to the product/brand databases, both local and global.

The parsing process relies on a simple lexical analyzer and token table. By searching for specific tokens, including, among others, "$" for price syntax and "Model" for model number, these attributes are readily extracted. Brand names are recognized by brand specific tokens stored in the token table.

If a computer user actually makes a purchase of a product from a particular web site, the product rating for that web site and product category can be automatically set to a top rating. In the current embodiment; five stars.

Intelligent Book-Marking

The present invention provides a facility that allows a computer user to create bookmarks for web pages even though that user is not engaged in cross-site comparative shopping. Whenever the computer user is browsing web pages, the computer user can hit a hot-key on the computer keyboard. By striking the hot-key, the browser companion 55 will present a web-page rating window 540.

Fig. 15B depicts the web-page rating window 540 presented to the computer user 75. Intelligent book-marking, as embodied in the present invention, organizes all bookmarks according to a category. The purpose of the web-page rating window 540 is to accept a categorization from the computer user 75. The web-page rating window 540 includes an enumeration of product categories. These product categories are comprised of either standard categories defined in a product/brand database 210 on the

cross-site comparison server 65 or they can be custom categories that are defined in the computer user's 75 local product/brand data base 330. Note that custom categories are not confined to products, but can include other forms of genera like "National Treasures" or "Eateries" for example.

Once the computer user has identified what category the bookmark should be filed under, then the browser companion 55 presents the rating window 545 to the computer user 75. The computer user 75 then can enter comments about the web page in the comment field 531 by first actuating the comment command button 530. In the intelligent book-marking context, the shopping cart command button 535 is deactivated, i.e. grayed out. The user can finally select a subjective rating for the web page using one of the rating-level command buttons (reference nos. 510, 515, 520, 525, 530, and 535).

The bookmark, comprising the web address of the web page, the user indicated category and the user indicated rating level, is then stored in the computer user's personal products/brands database 330. To retrieve the intelligent bookmarks, the computer user 75 strikes a different hot-key on the computer keyboard. The bookmark retrieval hot-key causes the browser companion 55 to present a bookmark navigator GUI.

Fig. 16 presents the configuration of the bookmark navigator GUI. This GUI presents all bookmarks entered by the computer user 75 on previous occasions and stored in the computer user's personal products/brands database 330. The bookmarks comprise hyperlinks to the web pages referenced by the bookmarks. The bookmarks themselves, are enumerated according to category and then presented according to rating level., That is, the bookmarks with the highest rating level appear first in the list.

Collaborative Shopping

User Profiling System

One key feature of the shopping experience provided by the present invention is the ability for several computer users to shop in a collaborative fashion. In order to ensure that this feature is beneficial, some selection means must be provided to ensure that the computer users that engage in

collaborative shopping are of like character. To enable this feature, the present invention relies on user profiles databases.

As the computer user 75 starts using the present invention, certain information about the user is collected the first time the system is used. This type of information will include the computer user's name, age, sex, phone number, address, and credit-card number. These personal attributes are collected by the browser companion 55 and stored in the local user profile database 300 (Fig. 3).

Other information about the computer user is collected in the due course of time as the computer user continues to use the cross-site shopping facilities that the system offers. As an example, the wallet module 380 will record purchase transactions in the local user profile database 300.

One aspect of the present invention that enables the selection of like users from a common pool is the capability to maintain detailed demographics for each computer user on their own respective computers and then provide only demographically significant profile data to central server. This means that certain information about the computer user is never communicated to the cross-site comparison server 65. The information that is not conveyed to the cross-site comparison server 65 consists of primarily of personally identifying details. These details include, but are not limited to computer user's name, phone number, address, and credit-card number.

On a periodic basis, the browser companion 55 will retrieve the demographically significant aspects for the computer user from the local user profile database 300 (Fig. 3). After having retrieved the demographic data, which may include the computer user's gender, income level, residence zip code, shopping histories, purchasing histories, and the like, the browser companion 55 will calculate a demographic score for the computer user. This demographic score is comprised of a plurality of eigenvectors representative of various aspects of the demographic profile. For instance, one eigenvector may represent that computer users propensity to purchase large durable goods over the Internet, while another eigenvector may indicate if the computer user has an affinity for motor sports. All of these various eigenvectors are then communicated to the cross-site comparison server 65.

Fig. 3 shows that the primary process in the cross-site comparison server 65 is the session 200. Every instantiation of the session process 200 receives eigenvectors from a user computer via the Internet. When the session process 200 receives a suite of eigenvectors from a users computer, that suite of eigenvectors is stored in a database of user demographic profiles 350. The shopper finder module 360 manages the demographic profile database.

Communication Facilities

The demographic profiles for a plurality of users stored in the database 350 as eigenvectors are the key enablers of collaborative shopping. Collaborative shopping is a means that enables computer users around the globe to browse web sites together. Most exciting about this facility is the fact that when a computer user requests a collaborative browsing session, only those users with consistent eigenvector profiles are selected to participate in the collaboration.

Fig. 5 shows that the list maker GUI 82 has a command button called E-MAIL FRIEND 370. This command button is available in every one of list maker GUI 82 subordinate GUIs. When the command button is clicked, the list maker GUI 82 expands to include a shopping companion window. At the same time, the browser companion 55 spawns off a communication process that opens a channel to the cross-site comparison server 65.

Fig. 17 depicts the initiation of the communication process by the browser companion 55 when the computer user 75 actuates the E-MAIL FRIEND 370 command button. The browser companion 55 sends a request for chat 380 to the cross-site comparison server 65. The cross-site comparison server 65 responds by identifying a plurality of users whose eigenvector values are substantially similar. The resultant list of users is then communicated to an instant messaging server 390.

The instant messaging server 390 attempts to contact other computer users that are connected to the Internet. The other users need not be using the cross-site shopping services of the present invention. Other users, but only computer users that are registered in the global profile database 350, need only be accessible over the Internet. These other users are prompted with an instant message that describes to purpose of the communication request.

The other users can decline to participate in the communication session. In that case, the first computer user is informed that no real-time shopping advice can be provided. Alternatively, the computer user is presented with an opportunity to send e-mail messages to one or more of the computer users that had been identified by the eigenvector comparison. The first computer user can then opt to send an e-mail, or may simply dispense with the communication request entirely.

Fig. 3 presents the actual mechanics of how the communication request results in an instant messaging initiated communication between two or more computer users. The request for communication services transmitted by the browser companion 55 is received by the session process 200 in the cross-site comparison server 65. The session process 200, after recognizing the communication request, forwards the request to the shopper finder module 360. The shopper finder module 360 uses a user identification tag that is inherent in the communication request as the basis of an eigenvector comparison against all other users registered in the global user profile database 350.

Fig. 18 depicts the appearance of the collaborative shopping GUI 450. The collaborative shopping GUI 450 is comprised of a product list window 455, a rating window 460, a summary window 465, a participant window 470 and a chat window 475.

Once the browser companion 55 has received notification of one or more on-line shoppers that are currently connected to the computer network and are willing to participate in a collaborative shopping session, the browser companion 55 presents the collaborative shopping GUI 450 to the computer user. When the collaborative shopping GUI 450 is presented to the computer user, the product list window 455 will present an enumeration of the items that were identified by the computer user 75 as product categories.

The computer user is also presented with an enumeration of the other on-line computer users, or shoppers, that have joined in the collaborative shopping session. This list is presented in the participant window 470. The computer user can now engage in live chat using the chat window 475. Anything that the computer user 75 types into the chat window will be echoed to the other

participating computer users along with the source name of the participant that entered chat text.

As the computer users participate in the collaborative shopping all members of the collaboration are presented with the same collaborative shopping window 450. This is enabled by establishing a communication channel over the Internet between the browser companions 55 executing on each computer user's own computer. What one collaborator sees, all see.

The collaborative shopping GUI 450, controlled by the browsing companion 55, allows a computer user to select a product category from the product list window 455. Once a computer user, either the first user that initiated the collaborative browsing session or any other collaborator, selects a product category, the browser companion 55 will present a list of sites that are offering products of that category for sale. By selecting one of the products offered by one of the sites, summary details about the product, including rating, product description, and price, are presented in the page summary window 465. This summary information, because it is seen by all of the collaborators, can stimulate the on-going chat discussion.

Should any one of the collaborators select a product offered by a particular site and then actuate the GO-TO-PAGE command button, then the merchant's web page is recalled from the merchant server. In this event, the merchant's web page can only be tailored to one of the collaborators. The demographics of the initiating computer user 75 are used for the basis of the composite web address described herein. The composite web address is augmented with a collaboration flag. This flag indicates that, even though the composite web address contains demographic data, any tailored web page will be presented to a plurality of users. This gives the merchant's server an opportunity to present a more generic form of the web page in this circumstance if the merchant so intends.

All of the windows integral to the collaborative shopping GUI 450 have scroll bars comprising scroll buttons 485 and sliders 480. Scroll bars are automatically added to the windows whenever the content of the window exceeds the physical size of the window as presented to the computer user 75. Both vertical and horizontal scroll bars are provided as dynamically required.

The collaborative shopping mechanism described herein establishes generic communication channels amongst all of the on-line shoppers that want to collaborate together. The generic communication channel can be used for transmitting real-time audio and video as well as text. One additional capability supported by this feature is the web-page tracking mechanism. Web-page tracking uses the communication channel to convey the addresses of web pages that are loaded by one user to the web browsers of other users. This means that when one user selects a web page, all other users will also see the same web page.

Alternative Embodiments

While this invention has been described in terms of several preferred embodiments, it is contemplated that alternatives, modifications, permutations, and equivalents thereof will become apparent to those skilled in the art upon a reading of the specification and study of the drawings. It is therefore intended that the true spirit and scope of the present invention include all such alternatives, modifications, permutations, and equivalents. Some, but by no means all of possible alternatives are described herein.

One possible alternative is that the browser companion could be replaced by a set of browser plug-ins, or integrated browser enhancements, that allow all GUI elements of the browser companion to reside inside the browser rather than in a separate window. An enhanced browser companion that includes the ability to display web pages; in this case, the browser "companion" would effectively replace the user's existing browser software.

Although this disclosure assumes that a computer user is using a personal computer to browse web pages, specialized devices whose sole function is to display web pages (these are sometimes called Internet appliances) could be used instead of the personal computer. Also, many web pages can be viewed on personal digital assistants (PDAs). The scope of this invention and disclosure includes, but is not limited these Internet appliances and PDAs.

The user profiling system disclosed herein relies on vector based descriptors. specifically eigenvectors. The spirit of this invention found in the user

anonymity that these vector based descriptors provide. Any alternative means that would allow the user's profile to be ascertained or reconstituted, but would preclude identification of the user, would be a suitable variant of this invention.

5

CLAIMS

1. A method for comparing and rating a plurality of items comprising the steps of:

soliciting from a computer user a desired category or topic for a query;

performing a query of a database that contains a plurality of items wherein the query selects items commensurate with said category or topic;

presenting the results of said query to the computer user;

accepting from the computer user a selection of one or more items resulting from said query;

presenting additional details for the selected items to the computer user;

accepting a rating for said selected items from the computer user;

affiliating said ratings with said selected items; and

storing said selected items with the affiliated rating for later retrieval by the computer user.

2. The method of Claim 1 further comprising the steps of:

parsing the items to extract attributes from said selected items that are relevant to said category or topic;

affiliating said attributes with said selected items; and

storing said selected items with the affiliated attributes for later retrieval by the computer user.

3. The method of Claim 1 wherein the solicitation of a desired category or topic is performed by presenting the computer user with an enumeration of genera and requiring the computer user to select from the enumerated genera.

4. The method of Claim 1 wherein the presentation of the results of said query is accomplished by presenting an enumeration of the items resulting from said query;

5. The method of Claim 1 wherein the acceptance of the selection of one of said items from the user is accomplished by presenting an enumeration of the items resulting from said query wherein the enumeration further comprises a hot-links to said item.

6. The method of Claim 1 wherein the acceptance of a rating for said selected item is accomplished by presenting the user with a plurality of rating grades and requiring the computer user to select one of said rating grades.

7. The method of Claim 1 wherein the step of presenting the items resultant from said query further comprises presenting ratings and attributes previously attached to said items.

8. The method of Claim 7 wherein the ratings previously attached to said items comprise a personal rating previously entered by the user.

9. The method of Claim 7 wherein the ratings previously attached to said items comprise an aggregate rating.

10. The method of Claim 9 wherein the aggregate rating is keyed to the category of said item and keyed to the web page of said item.

11. A method for providing cross-site shopping comprising:

soliciting from a computer user a desired category or topic for query;

performing a search of world-wide-web pages that contain content commensurate with said category or topic;

presenting the results of said search to the user;

accepting from the computer user a selection of one or more web pages resulting from said search;

presenting additional details for said selected web pages to the computer user;

accepting from the computer user a rating for said selected web pages;

affiliating said rating with said selected web pages; and

storing the addresses for said selected web pages together with the affiliated rating for later retrieval by the computer user.

12. The method of Claim 11 further comprising the steps of:

parsing said selected web pages to extract attributes from said selected web pages that are relevant to said category or topic;

affiliating said attributes with said selected web pages; and storing the address for said selected web pages together with the affiliated attributes for later retrieval by the user.

13. The method of Claim 11 wherein the solicitation of a desired category or topic is performed by presenting data entry fields to a user.

14. The method of Claim 11 wherein the presentation of the results of said query is accomplished by presenting an enumeration of web page addresses resulting from said search.

15. The method of Claim 11 wherein the acceptance of the selection of one of said items from the user is accomplished by presenting an enumeration of the web page addresses resulting from said search wherein the enumeration further comprises hot-links to the web pages.

16. The method of Claim 11 wherein the acceptance of a rating for said selected web page is accomplished by presenting the computer user with a plurality of rating grades and requiring the computer user to select one of said rating grades.

17. The method of Claim 11 wherein the step of presenting the web pages resulting from said search further comprises presenting ratings and attributes previously attached to said items.

18. The method of Claim 17 wherein the ratings previously attached to said web pages comprise a personal rating previously entered by the computer user.

19. The method of Claim 17 wherein the ratings previously attached to said items comprise an aggregate rating.

20. The method of Claim 19 wherein the aggregate rating is keyed to the category of said item and keyed to the web page of said item.

21. A method for providing intelligent book-marking of web-page sites comprising:

accepting a bookmark command from a user;

determining the address of the web-page the user is currently viewing;

accepting a category or topic from the user to serve as the basis of the genera of said web-page;

accepting a rating for said web-page from the user; and

storing the address of said web-page together with said rating for later retrieval by the user.

22. The method of Claim 21 further comprising the steps of:

parsing the web-page to extract attributes from said web-page relevant to said category or topic; and

storing said attributes for later retrieval by the user.

23. The method of Claim 21 wherein the rating accepted from the user is communicated together with the category or topic accepted from the user to a central repository.

24. The method of Claim 21 wherein the solicitation of a desired category or topic is performed by presenting the user with an enumeration of categories or topics and requiring the user to select one of the enumerated categories or topics.

25. The method of Claim 21 wherein the acceptance of a rating for said web-page is accomplished by presenting the user with a plurality of rating grades and requiring user to select one of said rating grades.

26. A method for enabling a plurality of computer users to communicate with each other over a computer network comprising the steps of:

creating profiles for each of a plurality of computer users;

accepting a request to communicate with other computer users from a first computer user;

retrieving the profile of said first computer user;

applying a collaborative filter to the profile of said first computer user to identify one or more other computer users;

presenting to said first computer user an enumeration of the one or more other computer users identified by application of said collaborative filter to the profile of said first computer user;

accepting from said first computer user a selection of a set of one or more other computer users identified by application of said collaborative filter to the profile of said first computer user; and

establishing a communication channel amongst said first computer user and all members of the said selected set of one or more other computer users.

27. The method of Claim 26 wherein the step of establishing a communication channel amongst said first computer user and all members of the said selected set of one or more other computer users is comprised of:

determining which computer users of said selected set of one or more other computer users are connected to the computer network;

conveying an instant messaging request to those computer users of said selected set of one or more other computer users that are connected to the computer network;

receiving a acceptance of the instant messaging request from one or more of the said selected set of one or more other computer users that are connected to the computer network; and

establishing a connection socket amongst said first computer user and all members of the said selected set of one or more other computer users from whom an acceptance was received.

28. The method of Claim 26 further comprising the steps of:

presenting a data entry screen to said first computer user and to all members of the said selected set of one or more other computer users;

accepting alphanumeric input from the data entry screens presented to said first computer user and to all members of the said selected set of one or more other computer users; and

echoing said alphanumeric input to the data entry screens presented to said first computer user and to all members of the said selected set of one or more other computer users.

29. The method of Claim 26 further comprising the steps of:

detecting the presentation of a new web page to said first computer user or to any one of the said selected set of one or more other computer users and identifying the computer user to whom said new web page was presented to as the initiator of said new web page;

conveying the address of said new web page to the said first computer user if said first computer user has not been identified as the initiator of the new web page and to all members of the said selected set of one or more other computer users that have not been identified as the initiator of said new web page; and

displaying to said first computer user if said first computer user has not been identified as the initiator of the said new web page and to all members of the said selected set of one or more other computer users that have not been identified as the initiator of said new web page the web page corresponding to the address conveyed to the said first computer user and to all members of the said selected set of one or more other computer users.

30. The method of Claim 26 further comprising the steps of:

presenting a data entry screen to said first computer user and to all members of the said selected set of one or more other computer users;

accepting alphanumeric input from the data entry screens presented to said first computer user and to all members of the said selected set of one or more other computer users; and

echoing said alphanumeric input to the data entry screens presented to said first computer user and to all members of the said selected set of one or more other computer users.

31. A method for creating a profile of characteristics for a computer user comprising the steps of:

assigning a unique identifier to the user;

collecting demographic information corresponding to the user;

collecting user's preferences;

tracking personal ratings of web pages;

recording search queries; and

recording on-line purchases;

32. The method of Claim 31 further comprising :
creating summary statistics of user buying habits.

33. A method of providing customization parameters for a web page comprising the steps of:
detecting the selection of a web site by a computer user;
intercepting the selection of said web site;
comparing the web address of said web site to web addresses stored in a database;
retrieving customization parameters for said web page from said database;
retrieving attributes describing said computer user from a computer user profile;
composing a tag in accordance with said customization parameters based on said attributes describing said computer user;
appending said tag to the web address of said intercepted web page selection; and
transmitting the web address with said appended tag to a web server.

34. A data item comparator for comparing a plurality of data items comprising:
category acceptance unit that accepts a category input from a user;
query unit that identifies the item references that are commensurate with said category from a set of item references stored in a database containing a plurality of item references;
presentation unit that presents the item references identified by the query unit to a user;
selection unit that accepts from a user a selection of one or more item references identified by the query unit;
detail-display-unit that presents detailed information to a user about the items referenced by the said selected item references;
rating-unit that accepts from a user a rating value for said selected item references; and
rating-storage-unit that stores ratings accepted by the rating unit together with the selected item references affiliated with the rating.

35. The data item comparator of Claim 34 further comprising:

item-parser that extracts attributes that are relevant to said category from the items referenced by said selected item references: and

attribute-storage-unit that stores said attributes together with the selected item references affiliated with the attributes.

36. The data item comparator of Claim 34 wherein the category acceptance unit presents the user with an enumeration of genera and requires the user to select a category from the enumerated genera.

37. The data item comparator of Claim 34 wherein the presentation unit presents an enumeration of the item references identified from said query;

38. The data item comparator of Claim 34 wherein the selection unit presents an enumeration of the item references identified by said query and accepts a selection event for each of the item references presented in said enumeration.

39. The data item comparator of Claim 34 wherein the rating-unit presents a plurality of rating grades to the user and requires the user to select one of said rating grades.

40. The data item comparator of Claim 34 wherein the presentation unit presents an enumeration of the item references identified from said query together with an enumeration of ratings previously stored with said item references.

41. The data item comparator of Claim 40 wherein the ratings previously stored with said item references comprise a personal rating previously accepted from the user by the rating-unit.

42. The data item comparator of Claim 40 wherein the ratings previously stored with said item references comprise an aggregate rating read from machine readable media.

43. The data item comparator of Claim 42 wherein the aggregate rating is keyed to the category of said item and keyed to the reference of said item.

44. A cross-site shopping system comprising:

category acceptance unit that accepts a category input from a user;
query unit that identifies web page references that are commensurate with said category from a set of web page references stored in a database containing a plurality of web page references;
presentation unit that presents the web page references identified by the query unit to a user;
selection unit that accepts from a user a selection of one or more web page references identified by the query unit;
detail-display-unit that presents detailed information to a user about the web pages referenced by the said selected web page references;
rating-unit that accepts from a user a rating value for said selected web page references; and
rating-storage-unit that stores ratings accepted by the rating unit together with the selected web page references affiliated with the rating.

45. The cross-site shopping system of Claim 44 further comprising the steps of:
item-parser that extracts attributes that are relevant to said category from the web pages referenced by said selected web page references; and
attribute-storage-unit that stores said attributes together with the selected web page references affiliated with the attributes.

46. The cross-site shopping system of Claim 44 wherein the category acceptance unit presents the user with an enumeration of genera and requires the user to select a category from the enumerated genera.

47. The cross-site shopping system of Claim 44 wherein the presentation unit presents an enumeration of the web page references identified from said query.

48. The cross-site shopping system of Claim 44 wherein the selection unit presents an enumeration of the web page references identified by said query and where each web page reference comprises a hyperlink to an affiliated web page.

49. The cross-site shopping system of Claim 44 wherein the rating-unit presents a plurality of rating grades to the user and requires the user to select one of said rating grades.

50. The cross-site shopping system of Claim 44 wherein the presentation unit presents an enumeration of the web page references identified from said query together with an enumeration of ratings previously stored with said web page references.

51. The cross-site shopping system of Claim 50 wherein the ratings previously stored with said item references comprise a personal rating previously accepted from the user by the rating-unit.

52. The cross-site shopping system of Claim 50 wherein the ratings previously stored with said web page references comprise an aggregate rating read from machine readable media.

53. The cross-site shopping system of Claim 52 wherein the aggregate rating is keyed to the category of said web page and keyed to the reference of said web page.

54. An intelligent web-page book-marking unit comprising:

a command recognizer that accepts a bookmark command from a user;

a browser interrogator that submits queries to a browser in order to determine the web address of a web page currently presented to a user;

a categorizer that accepts a category from a user that will serve as the basis of the genera of said currently presented web-page;

rating module that accepts a rating for said currently presented web-page from the user;

archive module that stores the web page address for said currently presented web page together with the category accepted from the user by the categorizer together with the rating accepted from the user by the rating module: and

bookmark navigator that retrieves web page address previously stored together with the category accepted from the user by the categorizer together with the rating accepted from the user by the rating module.

55. The intelligent web-page book-marking unit of Claim wherein the

bookmark navigator presents an enumeration of the bookmarks according to category.

56. The intelligent web-page book-marking unit of Claim 54 further comprising:

web-page parser that extracts attributes relevant to said category from said currently presented web-page; and

attribute archive module that stores said extracted attributes together with the web address of said currently presented web-page.

57. The intelligent web-page book-marking unit of Claim 54 wherein the categorizer presents the user with an enumeration of categories and requires the user to select one of the enumerated categories.

58. The intelligent web-page book-marking unit of Claim 54 wherein the rating module presents the user with a plurality of rating grades and requires user to select one of said rating grades.

59. A communication unit that enables computer users to communicate with each other over a computer network comprising:

profiling module that creates and maintains profiles for of a plurality of computer users;

communication initiator module that accepts requests to communicate with other computer users from a first computer user;

participant identifier module that retrieves the profile of said first computer user and compares the profile of said first computer user to the profiles of one or more other computer users;

participant selector module that presents to said first computer user an enumeration of the one or more other computer users identified by said participant identifier module; and

communication establishment module that accepts from said first computer user a selection set of one or more other computer users presented by the participant selection module and establishes a connection amongst said first computer user and the computer users in said selection set.

60. The communication unit of Claim 59 wherein communication establishment module further comprises:

Network interrogation module that determines which computer users in said selection set are presently connected to the network; and

instant messaging module that sends communication requests to those computer users of said selection set that are connected to the computer network.

61. The communication unit of Claim 59 further comprising:

plurality of data display modules; and

plurality of data entry modules that accept alphanumeric input from said first computer user and to all members of the said selected set of one or more other computer users and echoes said alphanumeric input to the data display modules.

62. The communication unit of Claim 59 further comprising:

plurality of page-load detector that detects when a new web page is loaded into the first of a plurality of browsers;

page-address-extractor that receives the web address of the page loaded by said browser;

page-address-repeater that transmits the web address of the page loaded by said browser; and

page-address-reproducer that receives web addresses from said page-address-repeater and conveys the addresses to said plurality of browser.

63. The communication unit of Claim 59 further comprising:

presenting a data entry screen to said first computer user and to all members of the said selected set of one or more other computer users;

accepting alphanumeric input from the data entry screens presented to said first computer user and to all members of the said selected set of one or more other computer users; and

echoing said alphanumeric input to the data entry screens presented to said first computer user and to all members of the said selected set of one or more other computer users.

64. A user profile unit comprising:

user identification module that assigns a unique identifier to a user;

data collection unit that collects demographic information corresponding to the user, preference data corresponding to the user; and

user activity tracker that records a users personal ratings of web pages and records search queries submitted by the user to a search engine and records on-line purchases the user has made.

65. The user profile unit of Claim 64 further comprising statistical accumulator that that maintains statistical histories of a users buying habits.

66. A web page tailoring unit for customizig web page comprising:

load-detector that detects the request by a browser to load a new web page and intercepts the load request message;

web addresses identifier that receives the load request message from the load detector and retrieves customization parameters stored in a database for the web page address inherent in the load request message;

composite web address generator that receives the web page address and customization parameters from the web address identifier, retrieves attributes required by the customization parameters that describe a computer user and appends said attributes to the web page address to form a composite web address ; and

address redirector that forwards the composite web address to a computer network and directs the contents to a browser.

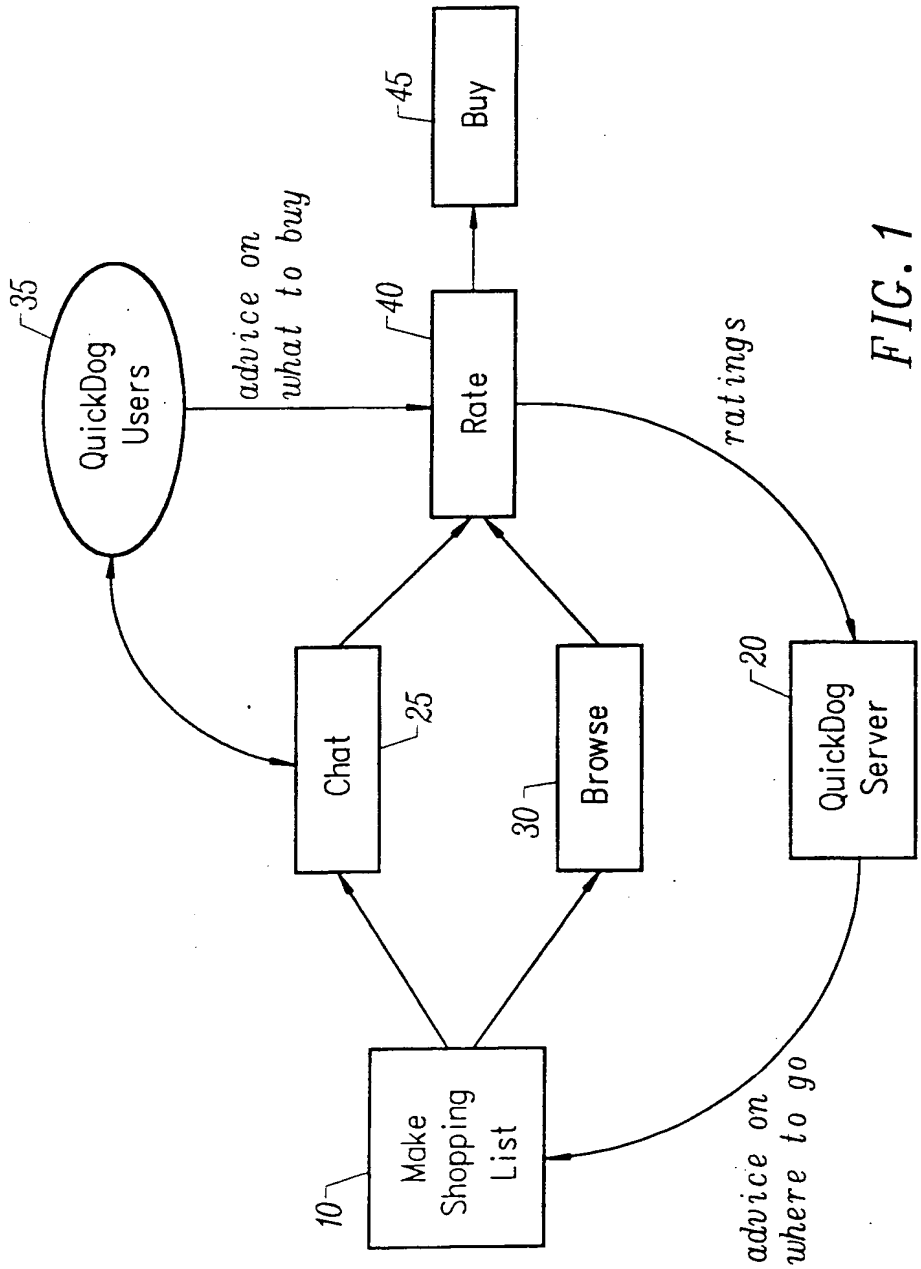

QuickDog Users
35
advice on what to buy
Buy
45
Rate
40
ratings
Chat
25
Browse
30
QuickDog Server
20
Make Shopping List
10
advice on where to go

FIG. 1

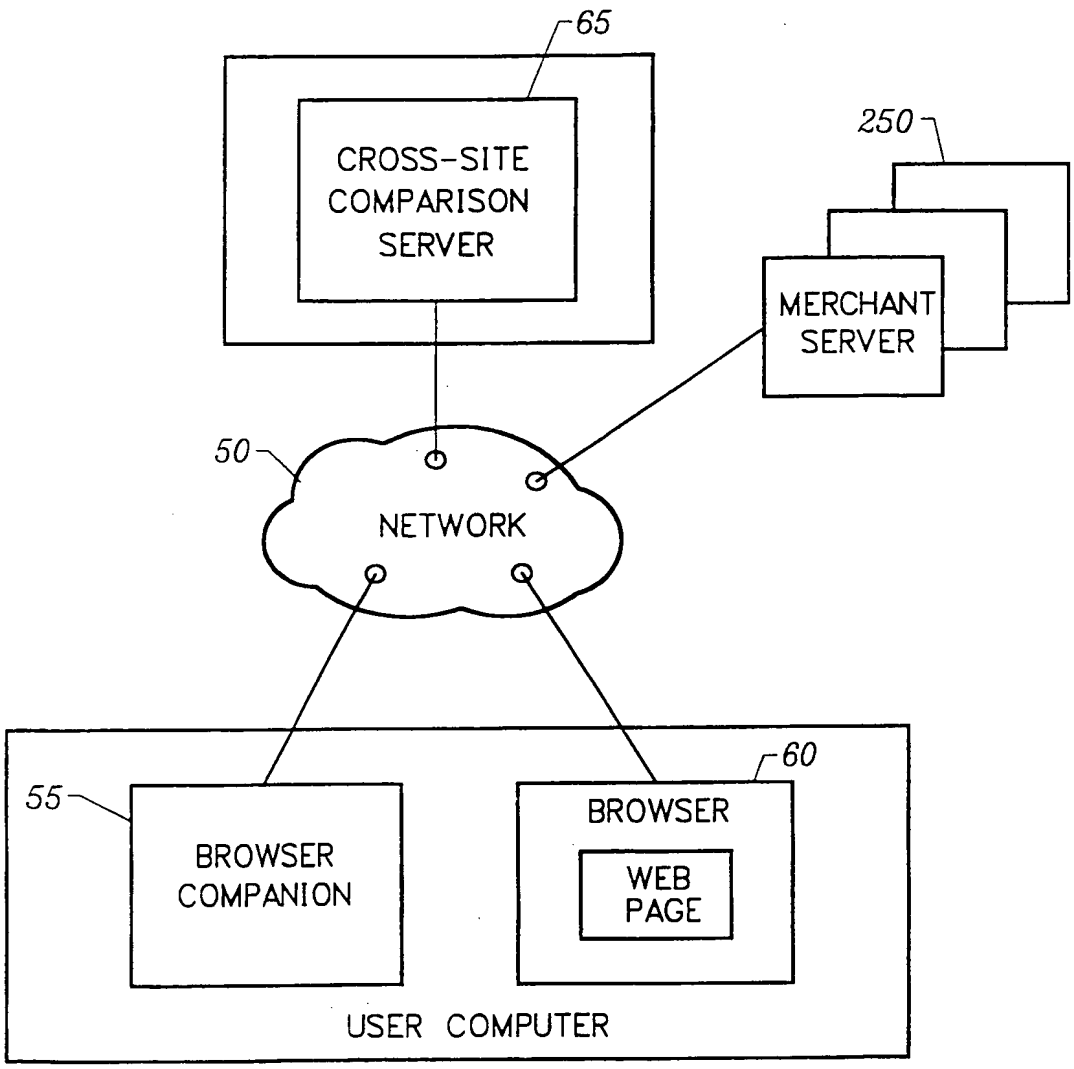

65
CROSS-SITE COMPARISON SERVER
250
MERCHANT SERVER
50
NETWORK
60
55
BROWSER COMPANION
BROWSER
WEB PAGE
USER COMPUTER

FIG. 2

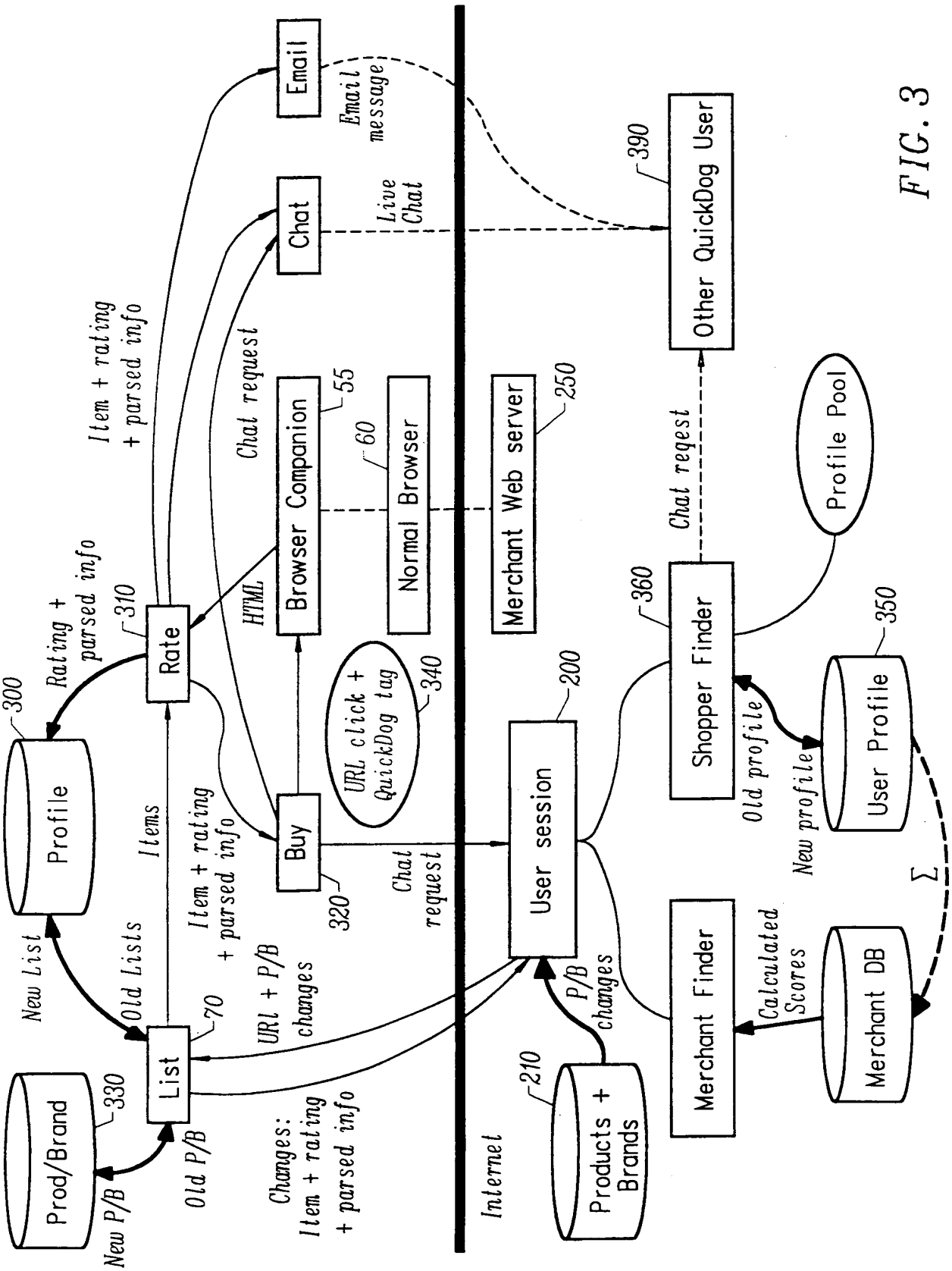

Email
Email message
Chat
Live Chat
Other QuickDog User
390
Item + rating + parsed info
Chat request
Browser Companion
55
Normal Browser
60
Merchant Web server
250
Chat regest
Profile Pool
Rate
310
HTML
Rating + parsed info
Profile
300
Items
Item + rating + parsed info
Buy
320
URL click + QuickDog tag
340
Chat request
User session
200
Shopper Finder
360
User Profile
350
Old profile
New profile
New List
Old Lists
70
URL + P/B changes
List
330
Prod/Brand
New P/B
Old P/B
Changes: Item + rating + parsed info
Internet
210
Products + Brands
P/B changes
Merchant Finder
Calculated Scores
Merchant DB
Σ

FIG. 3

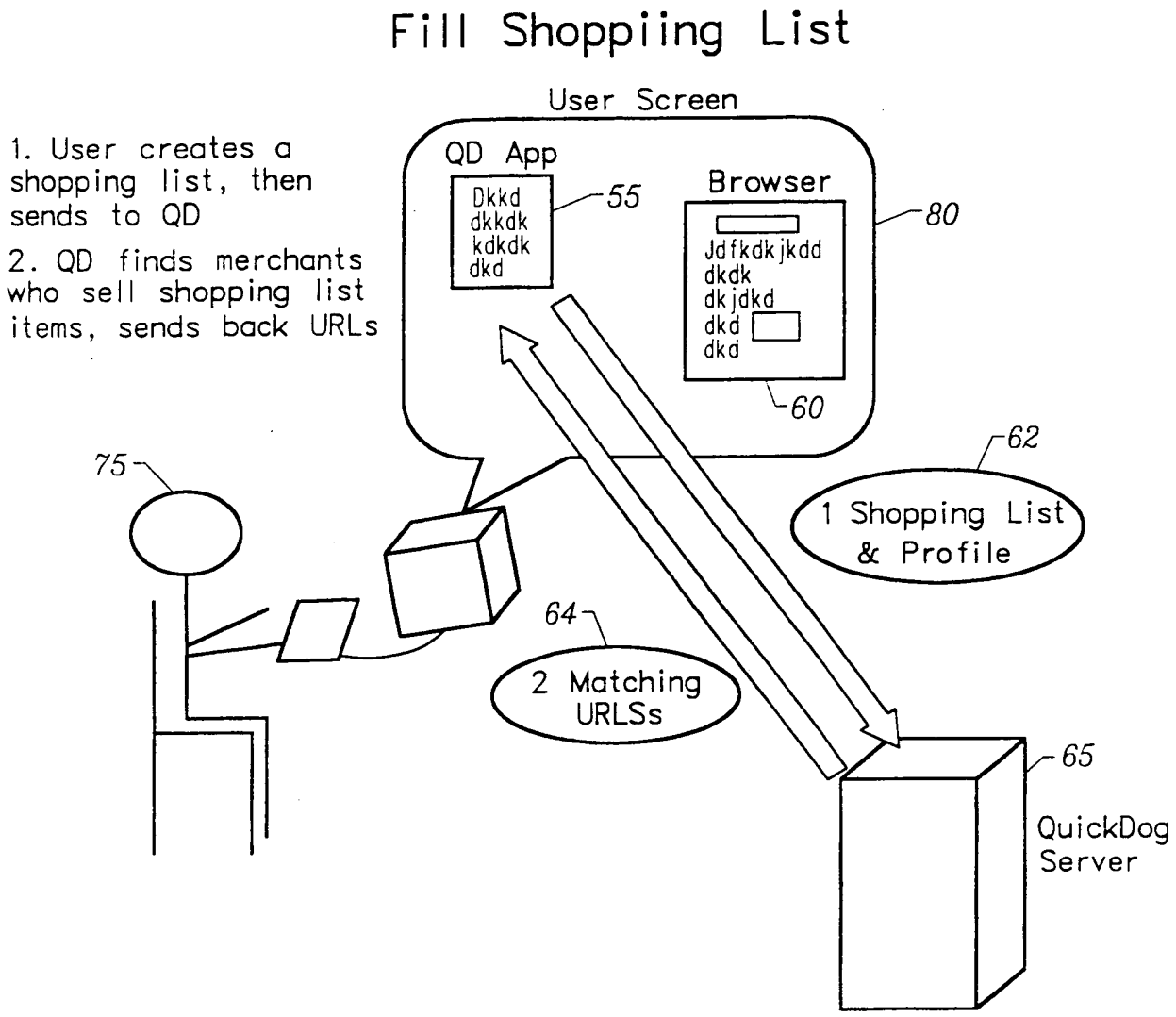

Fill Shoppiing List
User Screen
1. User creates a shopping list, then sends to QD
2. QD finds merchants who sell shopping list items, sends back URLs
QD App
Dkkd
dkkdk
kdkdk
dkd
55
Browser
Jdfkdkjkdd
dkdk
dkjdkd
dkd
dkd
60
80
75
62
1 Shopping List & Profile
64
2 Matching URLSs
65
QuickDog Server

FIG. 4

FIG. 5

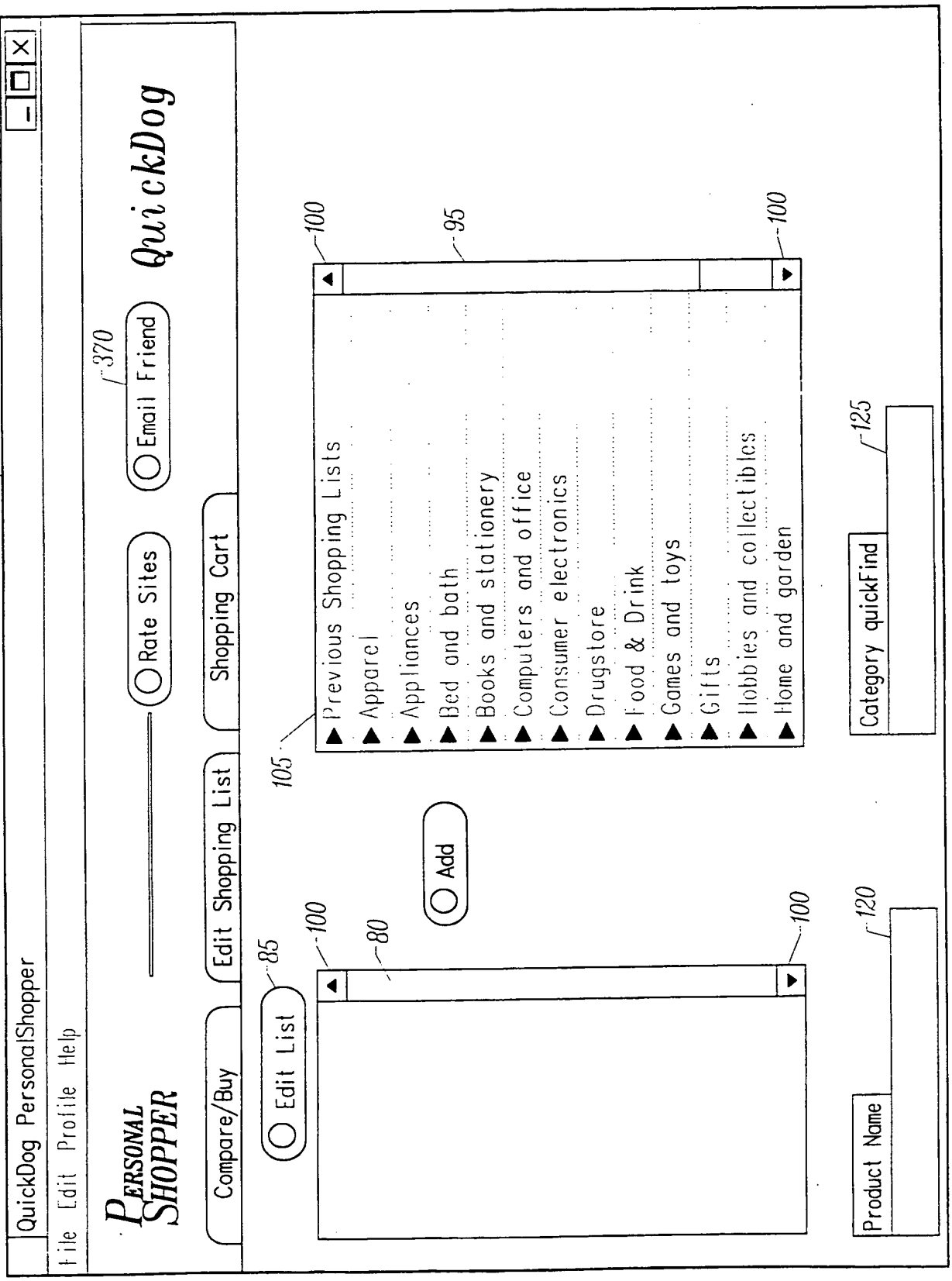

82
QuickDog PersonalShopper
File Edit Profile Help
PERSONAL SHOPPER
Rate Sites
370
Email Friend
QuickDog
Compare/Buy
Edit Shopping List
Shopping Cart
Edit List
85
100
80
Add
105
Previous Shopping Lists
Apparel
Appliances
Bed and bath
Books and stationery
Computers and office
Consumer electronics
Drugstore
Food & Drink
Games and toys
Gifts
Hobbies and collectibles
Home and garden
95
100
100
Product Name
120
Category quickFind
125

FIG. 6

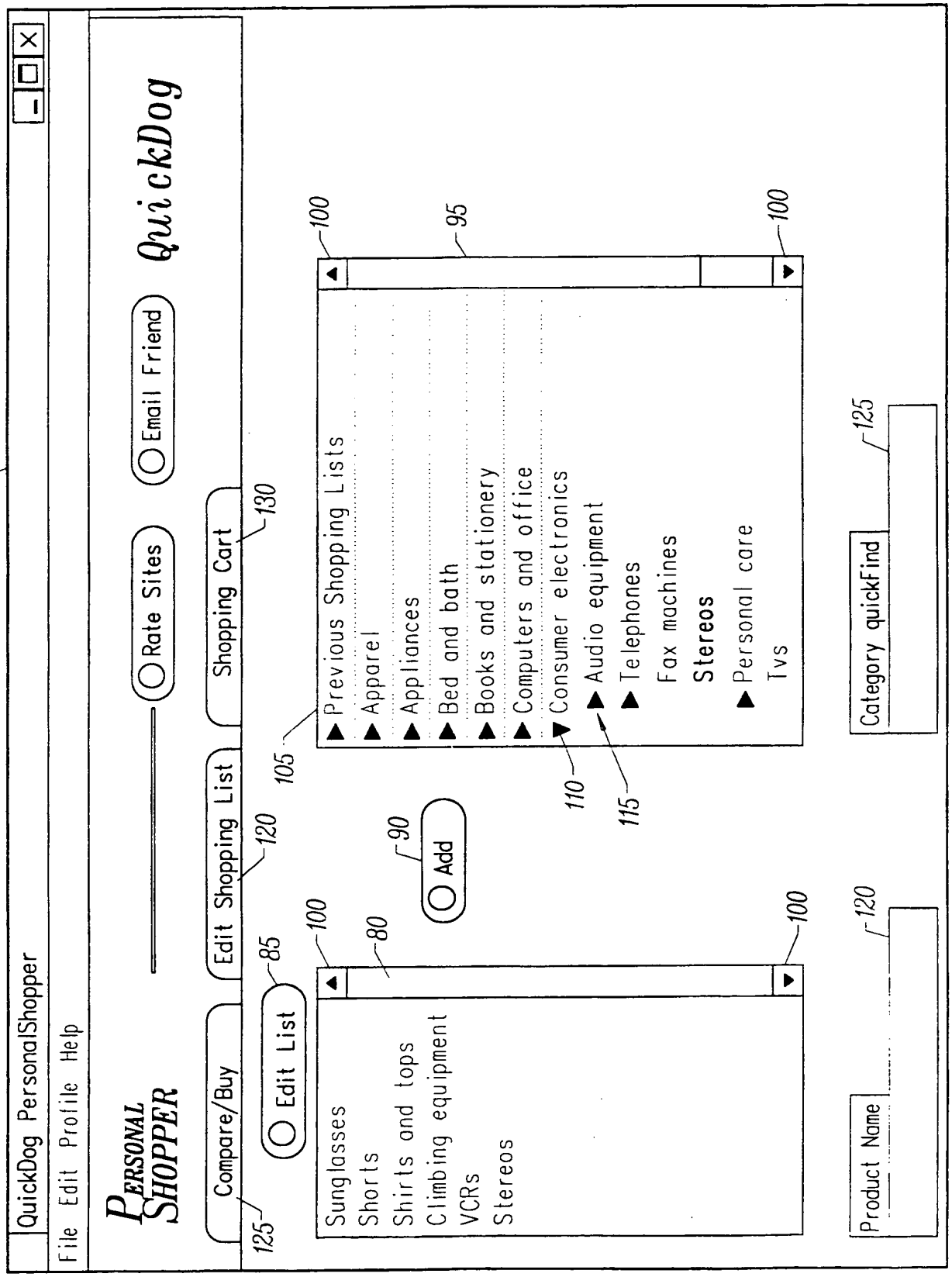

82
QuickDog PersonalShopper
File Edit Profile Help
PERSONAL SHOPPER
Rate Sites
Email Friend
QuickDog
Compare/Buy
Edit Shopping List
Shopping Cart
125
120
130
Edit List
85
100
80
Sunglasses
Shorts
Shirts and tops
Climbing equipment
VCRs
Stereos
90
Add
105
Previous Shopping Lists
Apparel
Appliances
Bed and bath
Books and stationery
Computers and office
Consumer electronics
Audio equipment
Telephones
Fax machines
Stereos
Personal care
Tvs
110
115
95
Category quickFind
125
Product Name
120

FIG. 7

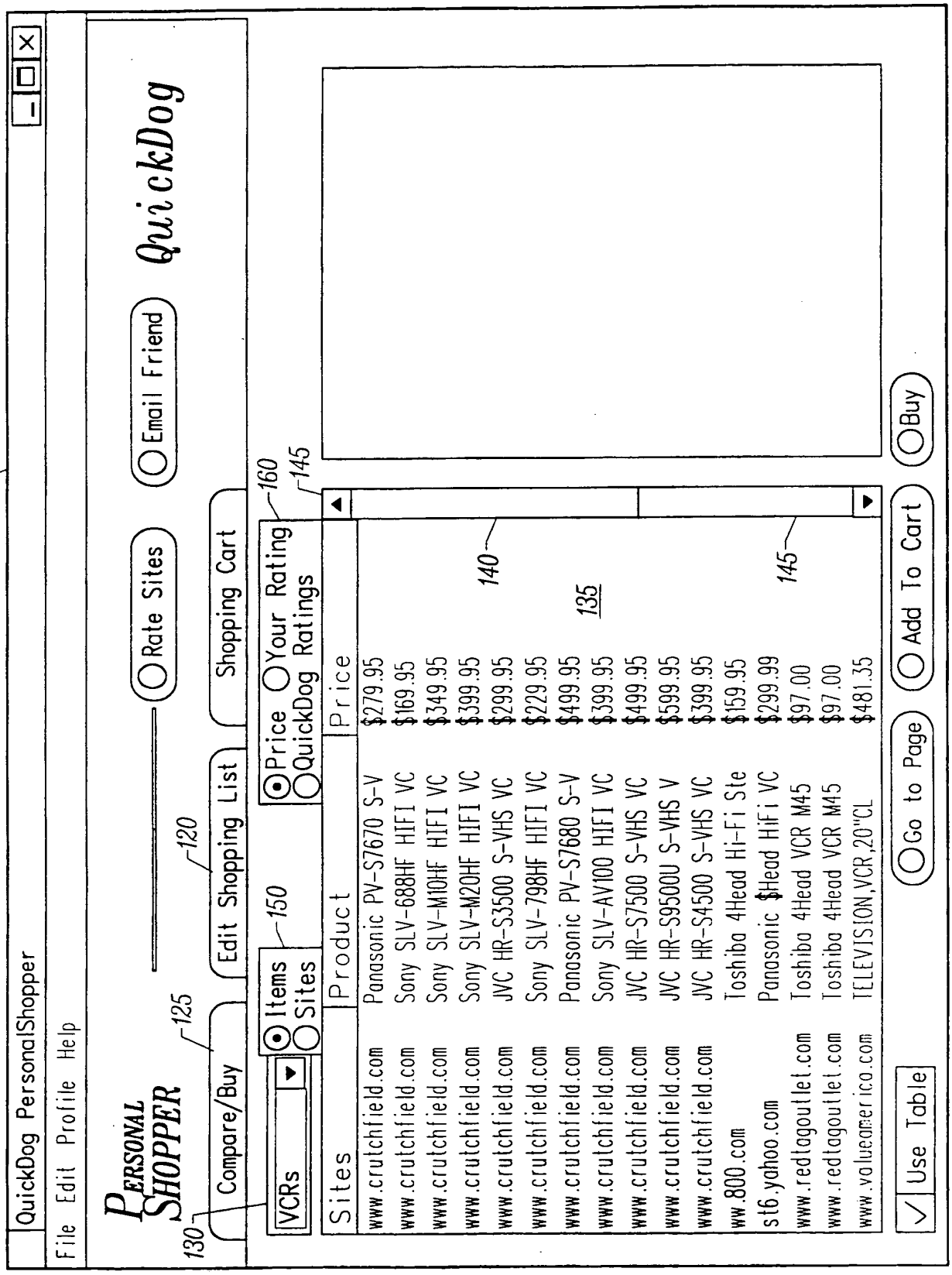

82
QuickDog PersonalShopper
File Edit Profile Help
PERSONAL SHOPPER
QuickDog
Rate Sites
Email Friend
Compare/Buy
Edit Shopping List
Shopping Cart
120
125
130
150
160
145
VCRs
Items
Sites
Price
QuickDog Ratings
Your Rating
Sites
Product
Price
www.crutchfield.com Panasonic PV-S7670 S-V $279.95
www.crutchfield.com Sony SLV-688HF HIFI VC $169.95
www.crutchfield.com Sony SLV-M10HF HIFI VC $349.95
www.crutchfield.com Sony SLV-M20HF HIFI VC $399.95
www.crutchfield.com JVC HR-S3500 S-VHS VC $299.95
www.crutchfield.com Sony SLV-798HF HIFI VC $229.95
www.crutchfield.com Panasonic PV-S7680 S-V $499.95
www.crutchfield.com Sony SLV-AV100 HIFI VC $399.95
www.crutchfield.com JVC HR-S7500 S-VHS VC $499.95
www.crutchfield.com JVC HR-S9500U S-VHS V $599.95
www.crutchfield.com JVC HR-S4500 S-VHS VC $399.95
ww.800.com Toshiba 4Head Hi-Fi Ste $159.95
st6.yahoo.com Panasonic $Head HiFi VC $299.99
www.redtagoutlet.com Toshiba 4Head VCR M45 $97.00
www.redtagoutlet.com Toshiba 4Head VCR M45 $97.00
www.valueamerica.com TELEVISION,VCR,20"CL $481.35
135
140
145
Use Table
Go to Page
Add To Cart
Buy

FIG. 8

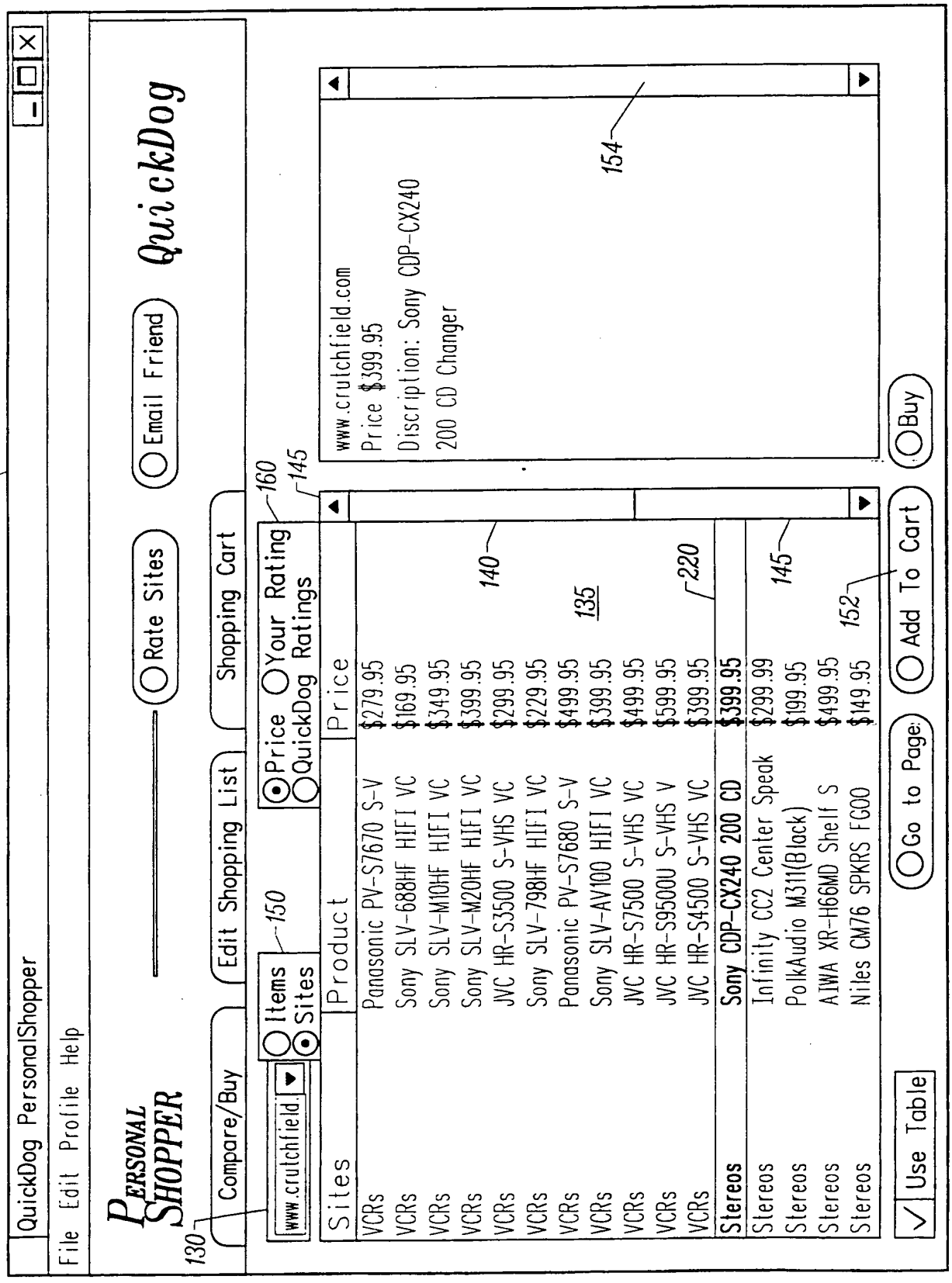
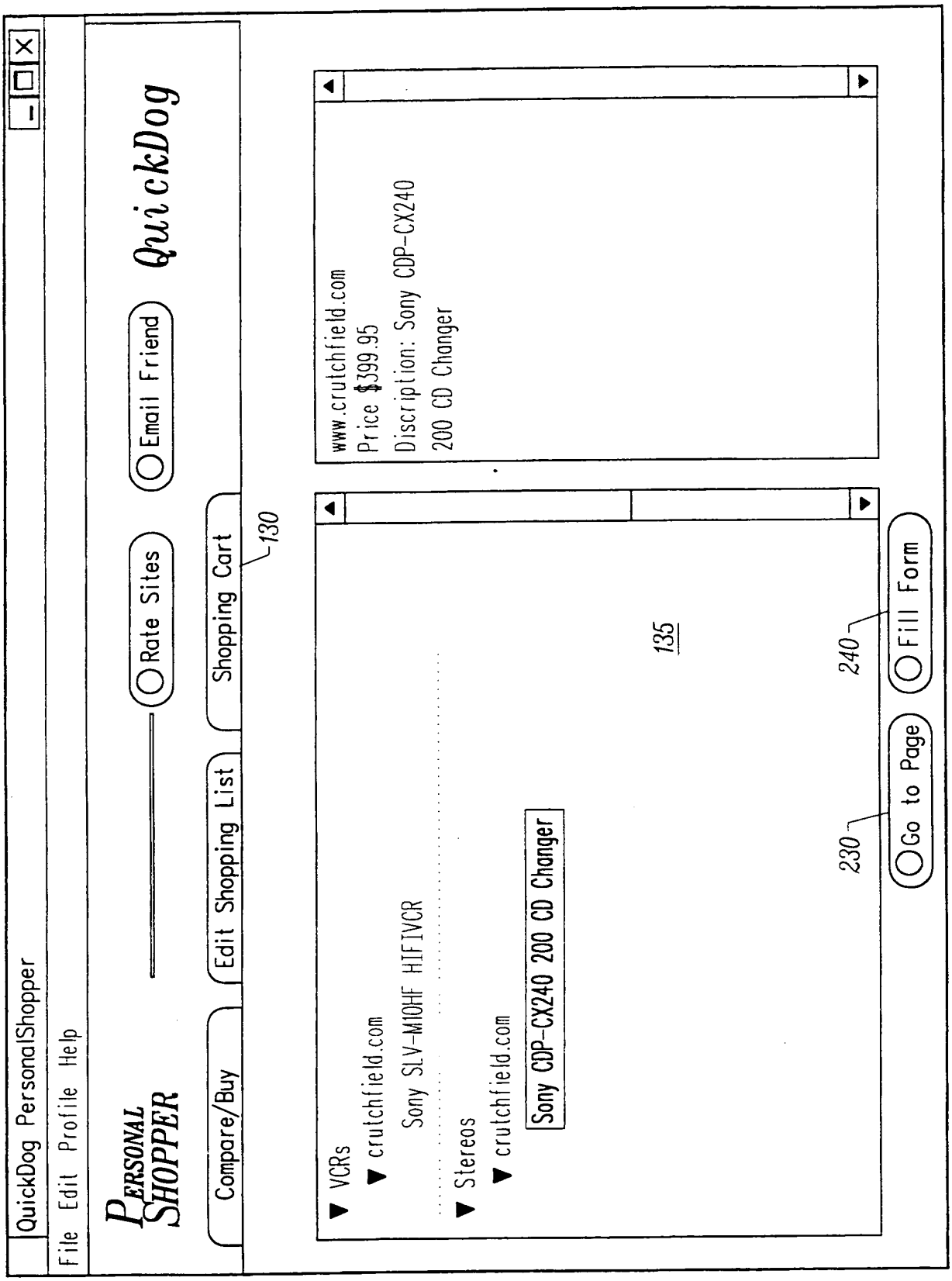

82
QuickDog PersonalShopper
File Edit Profile Help
Personal Shopper
QuickDog
Rate Sites
Email Friend
130
Compare/Buy
Edit Shopping List
Shopping Cart
www.crutchfield.com
Items
Sites
150
Price
QuickDog Ratings
Your Rating
160
145
Sites
Product
Price
VCRs Panasonic PV-S7670 S-V $279.95
VCRs Sony SLV-688HF HIFI VC $169.95
VCRs Sony SLV-M10HF HIFI VC $349.95
VCRs Sony SLV-M20HF HIFI VC $399.95
VCRs JVC HR-S3500 S-VHS VC $299.95
VCRs Sony SLV-798HF HIFI VC $229.95
VCRs Panasonic PV-S7680 S-V $499.95
VCRs Sony SLV-AV100 HIFI VC $399.95
VCRs JVC HR-S7500 S-VHS VC $499.95
VCRs JVC HR-S9500U S-VHS V $599.95
VCRs JVC HR-S4500 S-VHS VC $399.95
Stereos Sony CDP-CX240 200 CD $399.95
Stereos Infinity CC2 Center Speak $299.99
Stereos PolkAudio M311(Black) $199.95
Stereos AIWA XR-H66MD Shelf S $499.95
Stereos Niles CM76 SPKRS FG00 $149.95
140
135
220
145
152
154
www.crutchfield.com
Price $399.95
Discription: Sony CDP-CX240
200 CD Changer
Use Table
Go to Page
Add To Cart
Buy

FIG. 9


QuickDog PersonalShopper
File Edit Profile Help
PERSONAL SHOPPER
Rate Sites
Email Friend
QuickDog
Compare/Buy
Edit Shopping List
Shopping Cart
130
VCRs
crutchfield.com
Sony SLV-M10HF HIFIVCR
Stereos
crutchfield.com
Sony CDP-CX240 200 CD Changer
135
www.crutchfield.com
Price $399.95
Discription: Sony CDP-CX240
200 CD Changer
230
Go to Page
240
Fill Form

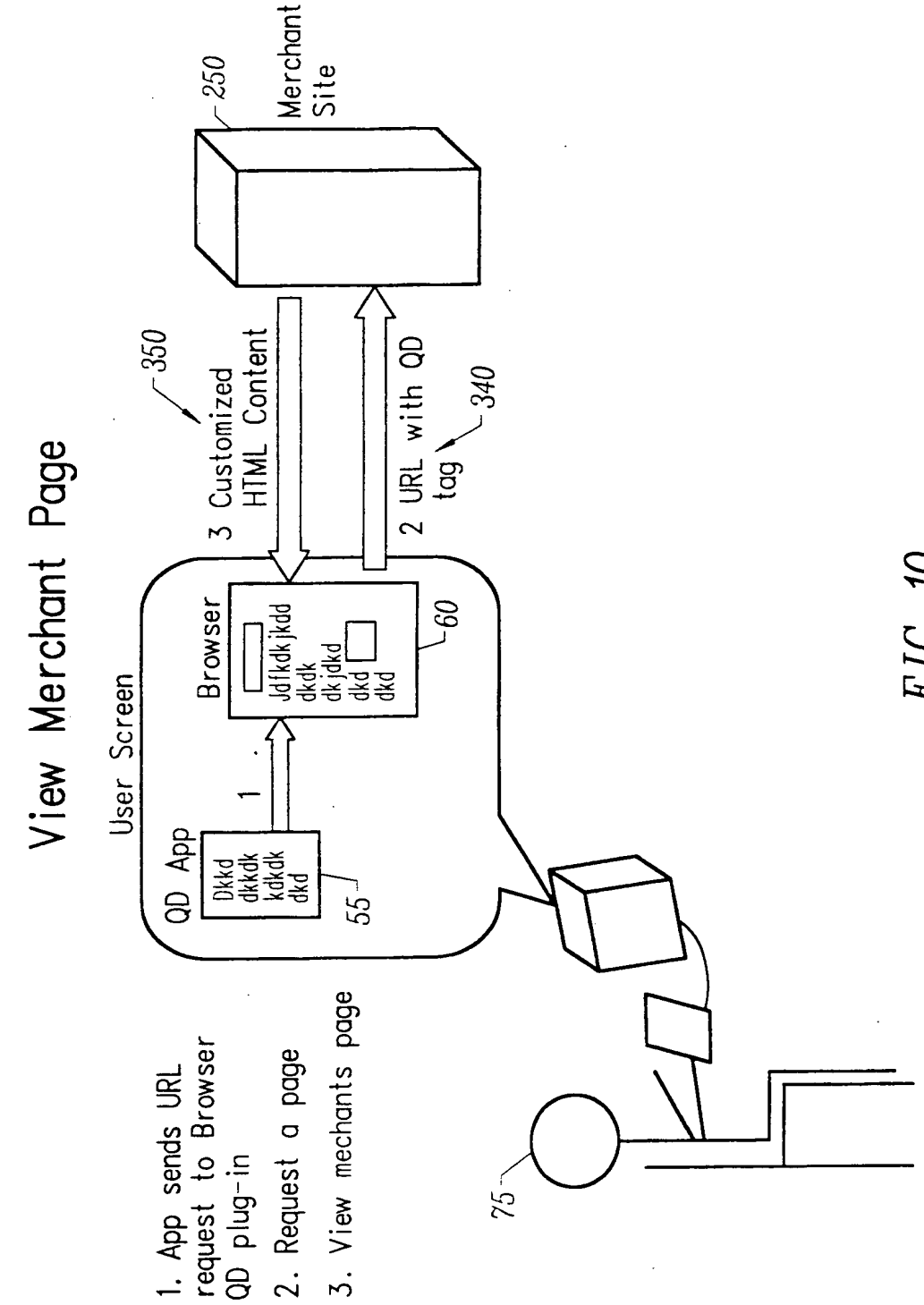
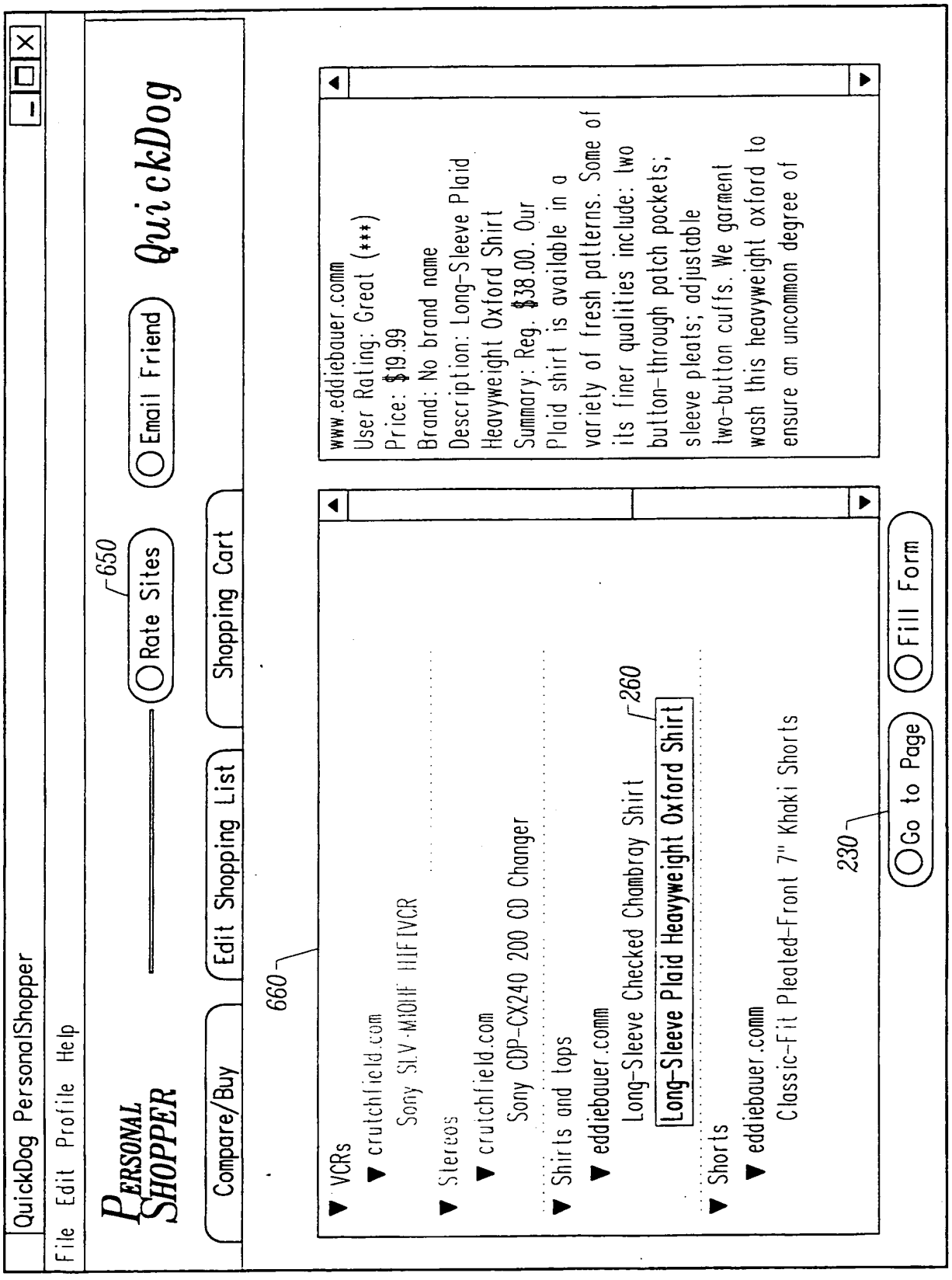

View Merchant Page
User Screen
QD App
Dkkd dkkdk kdkdk dkd
55
1
Browser
Jdfkdkjkdd dkdk dkjdkd dkd dkd
60
3 Customized HTML Content
350
2 URL with QD tag
340
Merchant Site
250
75
1. App sends URL request to Browser QD plug-in
2. Request a page
3. View mechants page

FIG. 10

FIG. 11


QuickDog PersonalShopper
File Edit Profile Help
PERSONAL SHOPPER
QuickDog
Email Friend
650
Rate Sites
Compare/Buy
Edit Shopping List
Shopping Cart
660
VCRs
crutchfield.com
Sony SLV-M10HF HIFI VCR
Stereos
crutchfield.com
Sony CDP-CX240 200 CD Changer
Shirts and tops
eddiebauer.comm
Long-Sleeve Checked Chambray Shirt
260
Long-Sleeve Plaid Heavyweight Oxford Shirt
Shorts
eddiebauer.comm
Classic-Fit Pleated-Front 7" Khaki Shorts
230
Go to Page
Fill Form
www.eddiebauer.comm
User Rating: Great (***)
Price: $19.99
Brand: No brand name
Description: Long-Sleeve Plaid Heavyweight Oxford Shirt
Summary: Reg. $38.00. Our Plaid shirt is available in a variety of fresh patterns. Some of its finer qualities include: two button-through patch pockets; sleeve pleats; adjustable two-button cuffs. We garment wash this heavyweight oxford to ensure an uncommon degree of

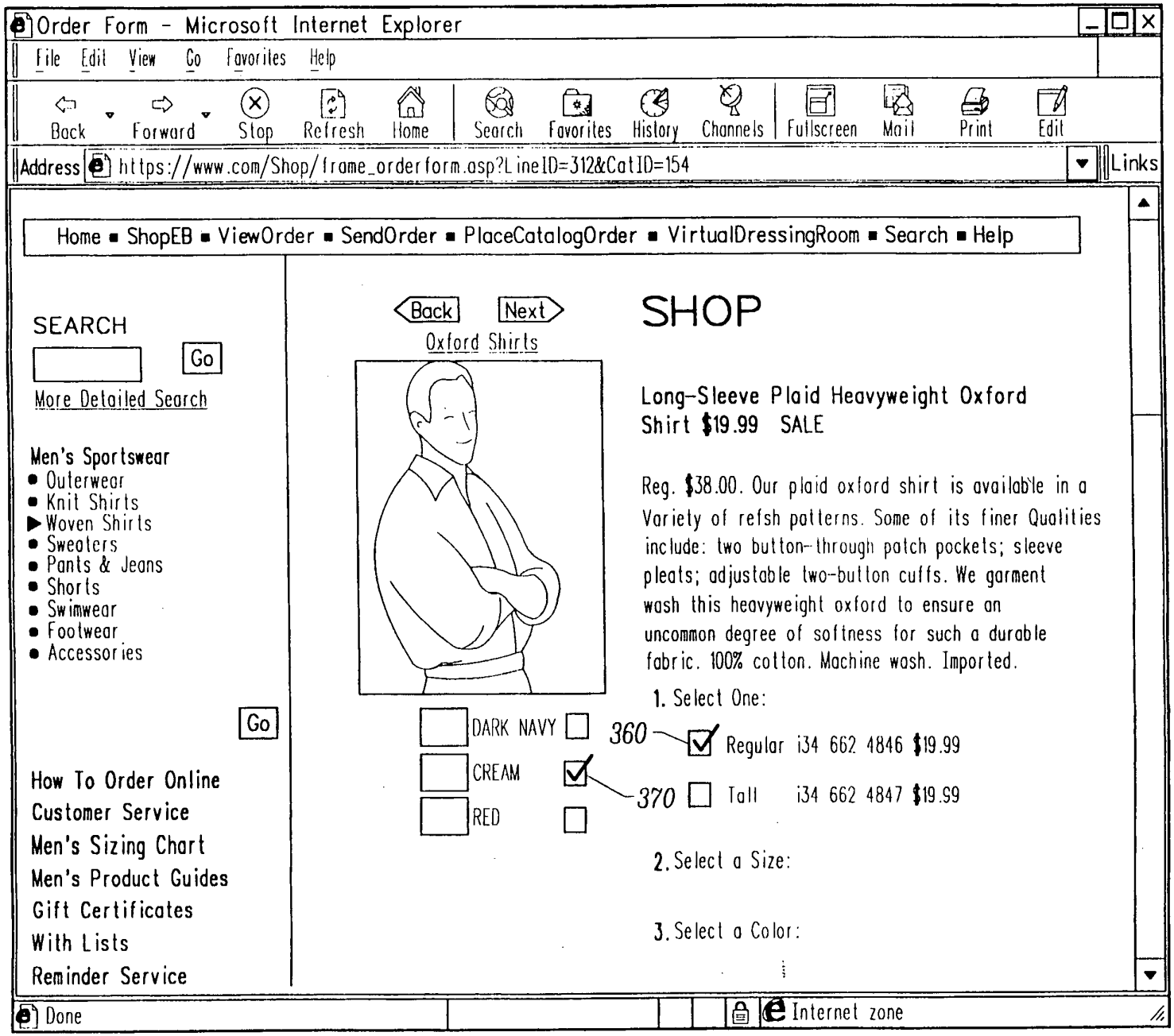

Order Form - Microsoft Internet Explorer
File Edit View Go Favorites Help
Back Forward Stop Refresh Home Search Favorites History Channels Fullscreen Mail Print Edit
Address https://www.com/Shop/frame_orderform.asp?LineID=312&CatID=154
Links
Home ■ ShopEB ■ ViewOrder ■ SendOrder ■ PlaceCatalogOrder ■ VirtualDressingRoom ■ Search ■ Help
SEARCH
Go
More Detailed Search
Men's Sportswear
● Outerwear
● Knit Shirts
▶ Woven Shirts
● Sweaters
● Pants & Jeans
● Shorts
● Swimwear
● Footwear
● Accessories
Go
How To Order Online
Customer Service
Men's Sizing Chart
Men's Product Guides
Gift Certificates
With Lists
Reminder Service
Back
Next
Oxford Shirts
SHOP
Long-Sleeve Plaid Heavyweight Oxford Shirt $19.99 SALE
Reg. $38.00. Our plaid oxford shirt is available in a Variety of refsh patterns. Some of its finer Qualities include: two button-through patch pockets; sleeve pleats; adjustable two-button cuffs. We garment wash this heavyweight oxford to ensure an uncommon degree of softness for such a durable fabric. 100% cotton. Machine wash. Imported.
DARK NAVY
CREAM
RED
1. Select One:
360
Regular i34 662 4846 $19.99
370
Tall i34 662 4847 $19.99
2. Select a Size:
3. Select a Color:
Done
Internet zone

FIG. 12

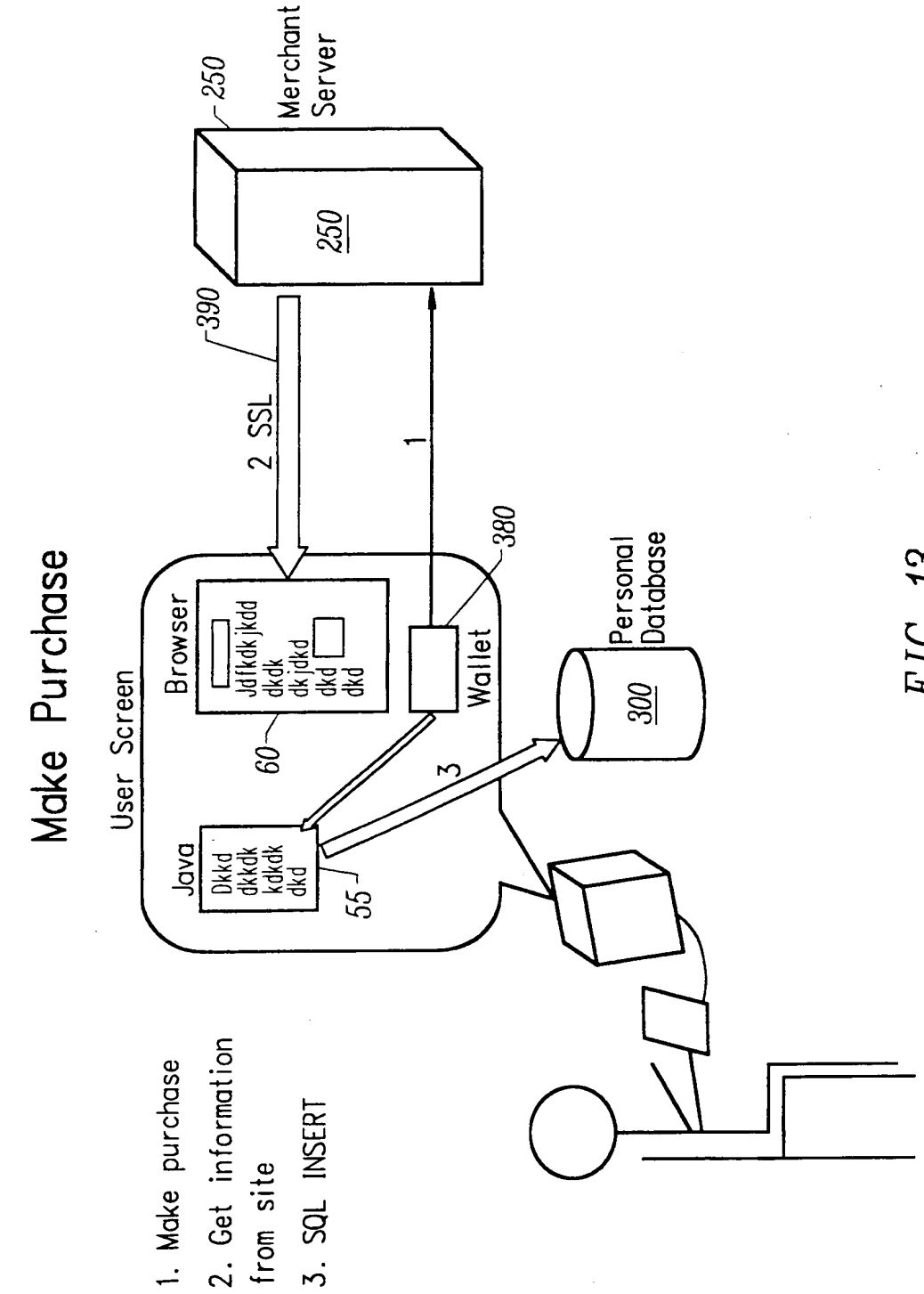

Make Purchase
User Screen
Browser
Jdfkdkjkdd
dkdk
dkjdkd
dkd
dkd
60
Java
Dkkd
dkkdk
kdkdk
dkd
55
Wallet
380
Personal
Database
300
250
Merchant
Server
250
390
2 SSL
1
3
1. Make purchase
2. Get information from site
3. SQL INSERT

FIG. 13

Order Form - Microsoft Internet Explorer
File Edit View Go Favorites Help
Back Forward Stop Refresh Home Search Favorites History Channels Fullscreen Mail Print Edit
Address https://www.com/Shop/frame_orderform.asp?LineID=312&CatID=154
Links
Home ■ ShopEB ■ ViewOrder ■ SendOrder ■ PlaceCatalogOrder ■ VirtualDressingRoom ■ Search ■ Help
SEARCH
Go
More Detailed Search
Men's Sportswear
Outerwear
Knit Shirts
Woven Shirts
Sweaters
Pants & Jeans
Shorts
Swimwear
Footwear
Accessories
Shop
Go
How To Order Online
Customer Service
Men's Sizing Chart
Men's Product Guides
Gift Certificates
With Lists
Reminder Service
SHOP
SHIPPING & BILLING INFORMATION
Click here to log in and fill in your ordering information automatically
Bill to:
(Name and address of the credit card holder.)
First Name:
Coco
400
Last Name:
Singh
405
E-mail Address:
Address:
Add'l Address:
City:
San Francisco
410
State/Province:
415
Zip/Postal Code:
94107
(No hyphens or spaces.)
Country:
420
Daytime Phone:
415 904 9000
(Required for international orders or Express Plus shipping.)
Internet zone

FIG. 14

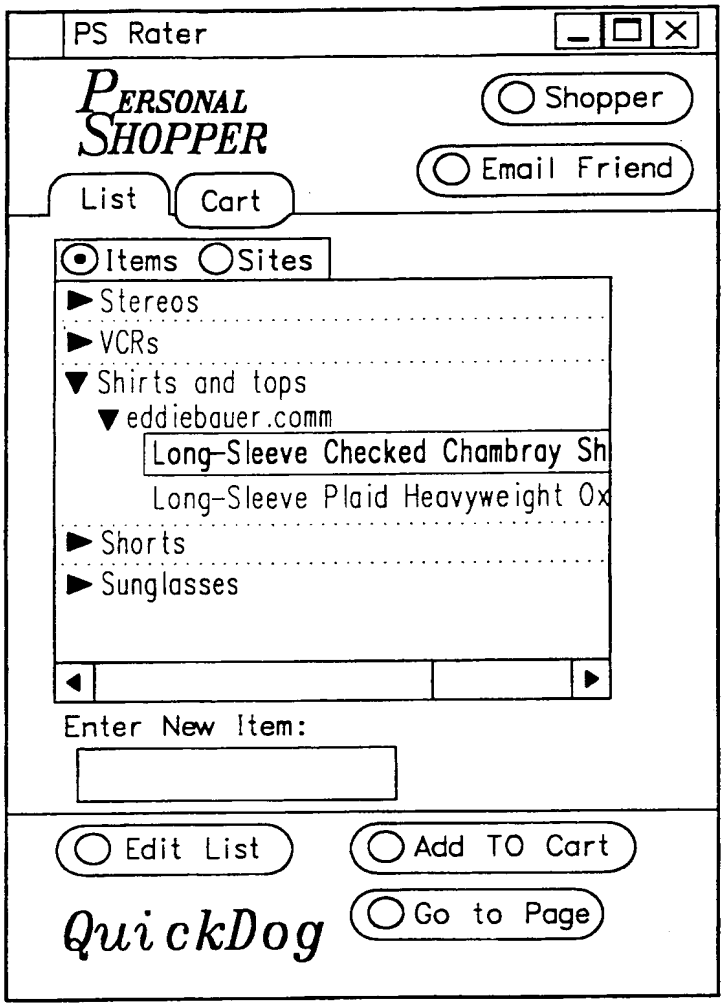

PS Rater
PERSONAL SHOPPER
Shopper
Email Friend
List
Cart
Items
Sites
Stereos
VCRs
Shirts and tops
eddiebauer.comm
Long-Sleeve Checked Chambray Sh
Long-Sleeve Plaid Heavyweight Ox
Shorts
Sunglasses
Enter New Item:
Edit List
Add TO Cart
QuickDog
Go to Page

FIG. 16

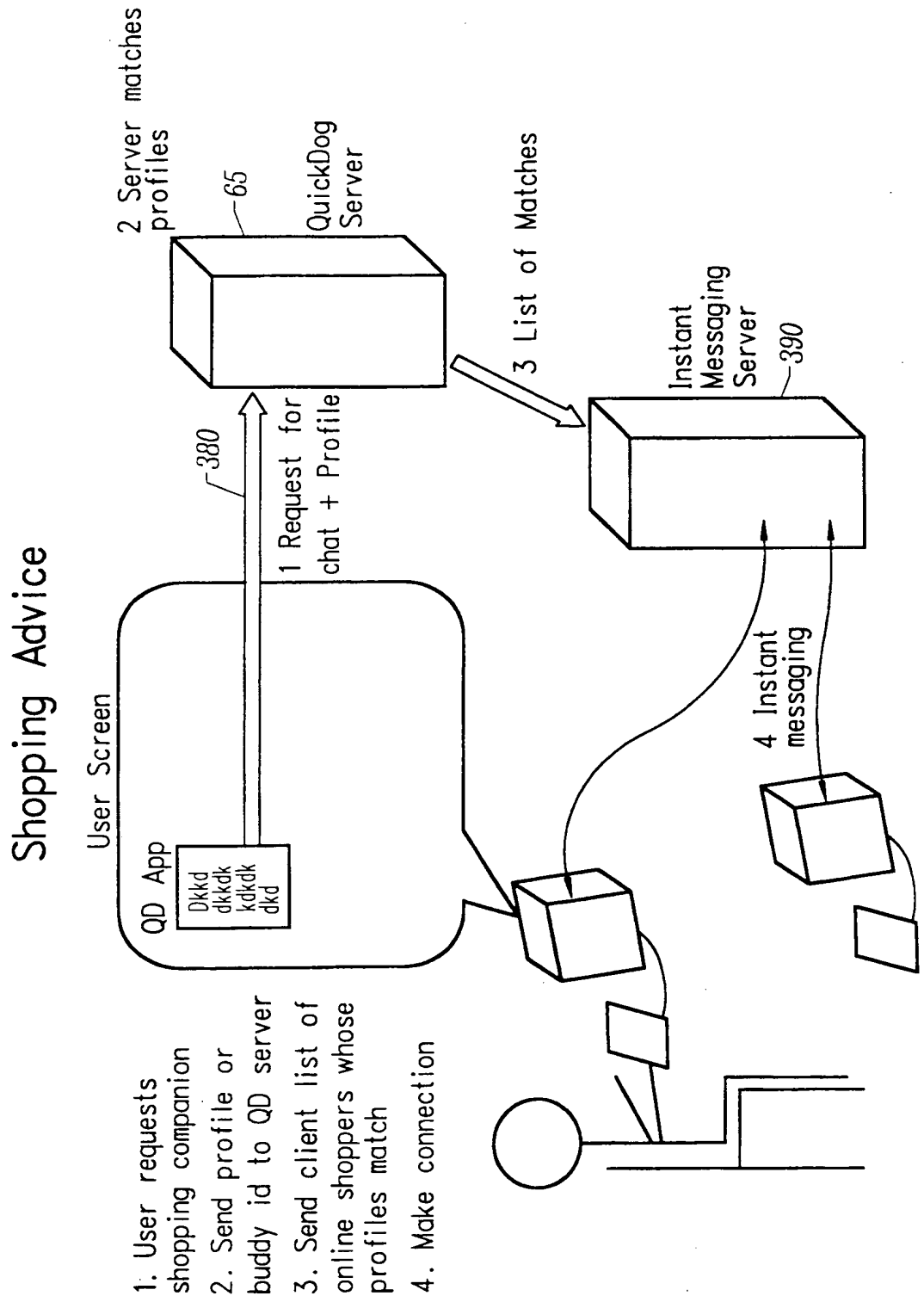

Shopping Advice
User Screen
QD App
Dkkd dkkdk kdkdk dkd
380
1 Request for chat + Profile
2 Server matches profiles
65
QuickDog Server
3 List of Matches
Instant Messaging Server
390
4 Instant messaging
1. User requests shopping companion
2. Send profile or buddy id to QD server
3. Send client list of online shoppers whose profiles match
4. Make connection

FIG. 17

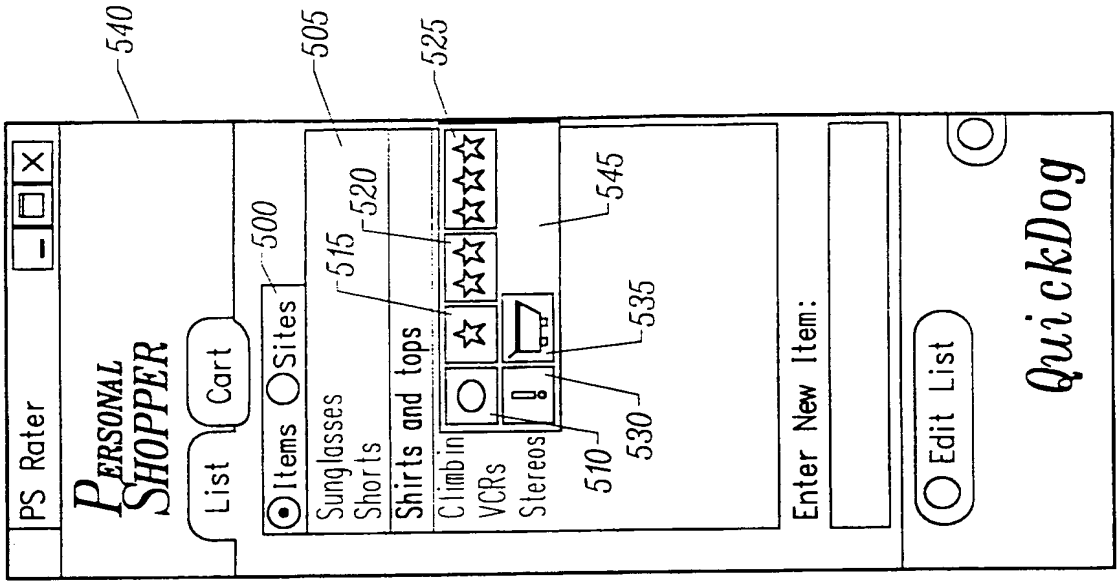


FIG. 15B

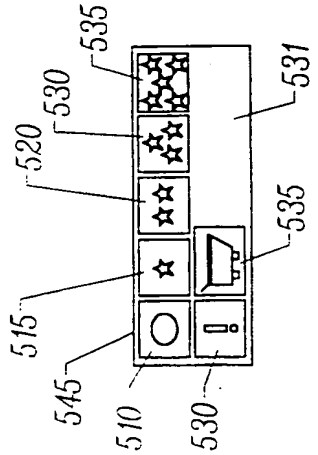
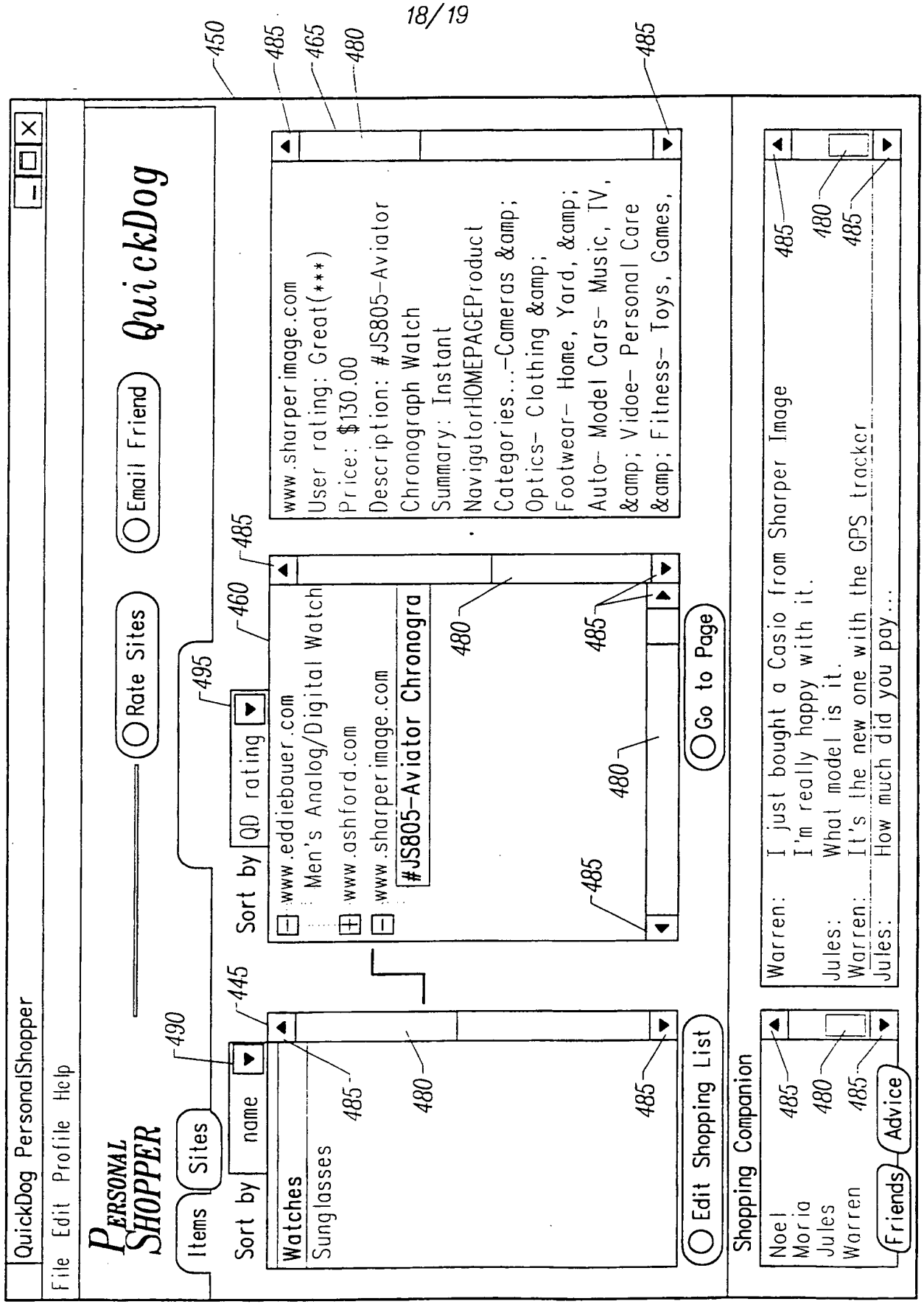


FIG. 15A

FIG. 18


QuickDog PersonalShopper
File Edit Profile Help
PERSONAL SHOPPER
QuickDog
Email Friend
Rate Sites
Items
Sites
Sort by
name
Watches
Sunglasses
Edit Shopping List
Go to Page
Sort by
QD rating
www.eddiebauer.com
Men's Analog/Digital Watch
www.ashford.com
www.sharperimage.com
#JS805-Aviator Chronogra
www.sharperimage.com
User rating: Great(***)
Price: $130.00
Description: #JS805-Aviator Chronograph Watch
Summary: Instant NavigatorHOMEPAGEProduct Categories...-Cameras & Optics- Clothing & Footwear- Home, Yard, & Auto- Model Cars- Music, TV, & Vidoe- Personal Care & Fitness- Toys, Games,
Shopping Companion
Noel
Maria
Jules
Warren
Friends
Advice
Warren: I just bought a Casio from Sharper Image
I'm really happy with it.
Jules: What model is it.
Warren: It's the new one with the GPS tracker
Jules: How much did you pay...
450
485
465
480
495
460
445
490

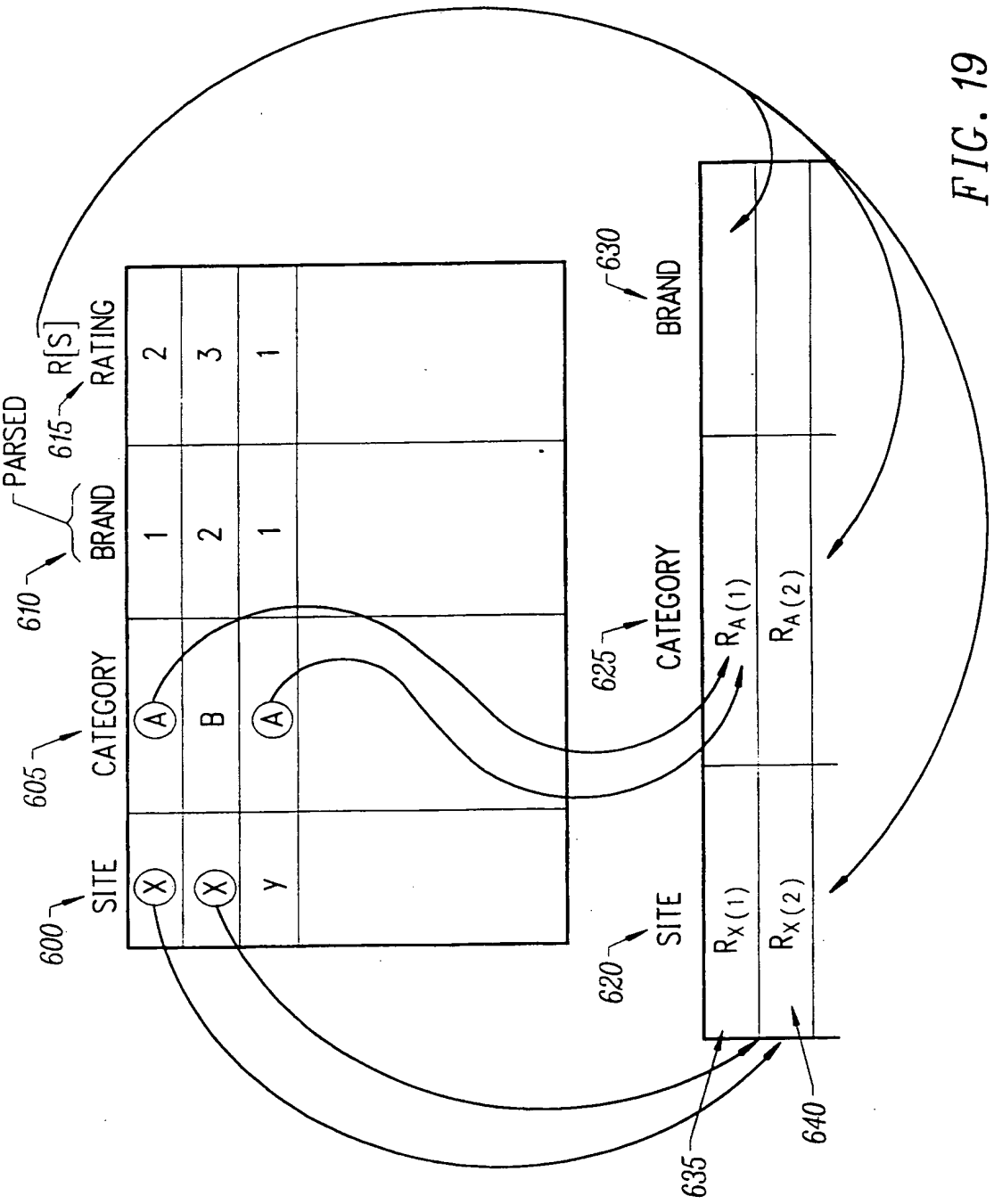

600
SITE
605
CATEGORY
610
PARSED
BRAND
615
R[S]
RATING
X
X
Y
A
B
A
1
2
1
2
3
1
620
SITE
625
CATEGORY
630
BRAND
$R_{X(1)}$
$R_{X(2)}$
$R_{A(1)}$
$R_{A(2)}$
635
640

FIG. 19

INTERNATIONAL SEARCH REPORT

Int. tional Application No
PCT/US 00/18116

A. CLASSIFICATION OF SUBJECT MATTER
IPC 7 G06F17/60 G06F17/30

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
IPC 7 G06F

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)
WPI Data, EPO-Internal, PAJ, IBM-TDB, INSPEC

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	RESNICK P ET AL: "GROUPLENS: AN OPEN ARCHITECTURE FOR COLLABORATIVE FILTERING OF NETNEWS" PROCEEDINGS OF CONFERENCE ON COMPUTER-SUPPORTED COOPERATIVE WORK, 7-10 OCT. 1990, LOS ANGELES,US,NEW YORK, NY, 22 October 1994 (1994-10-22), pages 175-186, XP000601284	1,2,4, 6-8,21, 22,25, 34-45
Y		54
A	page 175, left-hand column, line 1 - line 16 page 176, right-hand column, line 30 - line 51 page 179, left-hand column, line 3 -page 180, left-hand column, line 17; figure 3	11,46

-/--

[X] Further documents are listed in the continuation of box C.

[X] Patent family members are listed in annex.

° Special categories of cited documents :

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier document but published on or after the international filing date

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.

"&" document member of the same patent family

Date of the actual completion of the international search	Date of mailing of the international search report
31 October 2000	07/11/2000

Name and mailing address of the ISA	Authorized officer
European Patent Office, P.B. 5818 Patentlaan 2 NL - 2280 HV Rijswijk Tel. (+31-70) 340-2040, Tx. 31 651 epo nl, Fax: (+31-70) 340-3016	Deane, E

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INTERNATIONAL SEARCH REPORT

Int ional Application No
PCT/US 00/18116

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category °	Citation of document, with indication,where appropriate, of the relevant passages	Relevant to claim No.
X	WO 99 06924 A (CULLISS GARY) 11 February 1999 (1999-02-11)	1,11-16, 19-25, 44,45, 47-50,52
Y	page 11, line 15 -page 14, line 23	54-58
A		51

X	WO 97 26729 A (ROBINSON GARY B) 24 July 1997 (1997-07-24)	31,32, 64,65
A	abstract page 2, line 1 -page 7, line 8; claim 2	11

Y	CHOINSKI E M: "HIGH MARKS FOR SMART MARKS (A NEW BOOKMARKS ORGANIZER FROM NETSCAPE): A REVIEW ARTICLE" INTERNET REFERENCE SERVICES QUARTERLY,US,BINGHAMTON, NY, vol. 1, no. 3, 1996, pages 117-123, XP000865762 ISSN: 1087-5301 page 119, line 15 -page 121, line 22; figure 1	54-58

A	KONSTAN J A ET AL: "GROUPLENS: APPLYING COLLABORATIVE FILTERING TO USENET NEWS. HIGH VOLUME AND PERSONAL TASTE MAKES USENET NEWS AN IDEAL CANDIDATE FOR COLLABORATIVE FILTERING TECHNIQUES" COMMUNICATIONS OF THE ASSOCIATION FOR COMPUTING MACHINERY,US,ASSOCIATION FOR COMPUTING MACHINERY. NEW YORK, vol. 40, no. 3, 1 March 1997 (1997-03-01), pages 77-87, XP000689874 ISSN: 0001-0782 page 82, right-hand column, line 39 -page 85, left-hand column, line 24; figures 3,6	26,59

A	US 5 918 014 A (ROBINSON GARY B) 29 June 1999 (1999-06-29) abstract	33,66

1

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INTERNATIONAL SEARCH REPORT

Information on patent family members

Im ational Application No
PCT/US 00/18116

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
WO 9906924 A	11-02-1999	US 6006222 A	21-12-1999
		AU 2035199 A	22-02-1999
		US 6078916 A	20-06-2000
		US 6014665 A	11-01-2000
WO 9726729 A	24-07-1997	AU 1566597 A	11-08-1997
		US 5918014 A	29-06-1999
US 5918014 A	29-06-1999	AU 1566597 A	11-08-1997
		WO 9726729 A	24-07-1997

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